(Revised DEIR p. 4.3-17.) Presumably, the FSRU could become detached in the event of an earthquake, storm, or other natural disaster. In fact, one of BHP Billiton's platforms came loose in the Gulf of Mexico during Hurricane Rita. (See comments regarding Safety.) If so, the safety measures described may not be sufficient to control such an enormous structure, which may then pose a hazard to vessels in the area. A more detailed analysis must be conducted to determine the effectiveness of the proposed safety measures and to detail other appropriate safety measures in the event that the FSRU becomes detached from its ocean floor anchor.

4.3.4 Impact Analysis and Mitigation

Impact MT-3: Long-Term Increase in Safety Hazards due to the Presence of the FSRU and LNG Carriers

The Revised DEIR's analysis of collisions between LNG carriers, supply/crew vessels and other marine vessels remains insufficient. Between 416 and 468 annual support vessel and tug transits to and from Port Hueneme are estimated per year. (Revised DEIR Table 4.3-3). Additionally, "[v]essel traffic from Port Hueneme and the Port of Long Beach/Los Angeles is projected to increase over the next 40 years" and "[m]uch of this vessel traffic will travel through the Santa Barbara Channel TSS." (Revised DEIR at p.4.3-33, referring to "Traffic Separation Scheme.") The support vessels are expected to travel on and across the Santa Barbara Channel TSS daily on the way to Port Hueneme. (Revised DEIR at Figure 4.3-3.) The Revised DEIR acknowledges that "maritime traffic could be substantially increased with Project operations and the risk of vessel collision could be increased," but only classifies this risk as a Class II impact. (Revised DEIR at p.4.3-34). As we stated in our comments to the original Draft EIS, the addition of this much vessel traffic in the TSS increases the complexity of navigation for all mariners and increases risks of vessel collisions. Therefore, it is important that all impacts to marine safety are adequately analyzed.

With the information provided in the Revised DEIR, it is not clear why risks of vessel collisions due to increased marine traffic are only classified as a Class II impacts and not Class I impacts. The Revised DEIR does not disclose or provide any statistical analysis showing impacts between support vessel traffic and commercial vessel traffic in the TSS, or a statistical analysis showing potential future increases in collisions due to the expected increase in commercial vessel traffic in the Santa Barbara Channel TSS. The Revised DEIR merely states, "the statistical likelihood of the ship collisions involving vessels associated with Cabrillo Port was evaluated" and "several scenarios were evaluated for the risk of collision of Project vessels with other vessels." (Revised DEIR at p.4.3-35.) However, the analysis is not disclosed in the Revised DEIR. The Revised DEIR only provides an analysis of the risks of vessels colliding with the FSRU, and not vessel collisions with each other. (Revised DEIR Table 4.3-5). The Revised DEIR must disclose these analyses so the public can be assured of the true risks of vessel collisions between LNG carriers, supply and support vessels, commercial vessels, recreational boaters, and commercial fishers. If the project is found to "[c]ause a substantial increase

G207-130 Continued

G207-130 Continued

G207-131

G207-131
As indicated in the response to Comment G207-129, the maximum number of LNG carriers at the FSRU has been reduced to a maximum of 99 annually. Sections 4.3.1 and 4.3.4 contain information on vessel traffic between the FSRU and Port Hueneme. The Applicant has updated its projections of vessel traffic between Port Hueneme and the FSRU. Projected weekly vessel transits have been reduced. Table 4.3-3 has been updated with these revised projections. Impact MT-2 in Section 4.3.4 contains the revised analysis of potential impacts on maritime traffic. It was determined that that the increase of vessel traffic was not significant because there would only be an increase in at most two roundtrips per day to and from the FSRU. In general, there would only be one roundtrip per day by a service vessel.

LNG carriers approaching and departing the Cabrillo Port FSRU would travel on the routes depicted in Figure 4.3-2 (also see Section 4.3.1.3). LNG carriers would neither cross nor enter the Santa Barbara Channel coastwise traffic lanes under normal operating conditions. The FSRU would be located about 2 nautical miles from the southbound coastwise traffic lane. Given this distance, its presence, under normal operating conditions, would not interfere with operations in the coastwise traffic lanes.

LNG carriers and commercial vessels longer than 65 feet (20 m) would be equipped with an automatic identification system (AIS) so that they would be able to detect other LNG carriers and other vessels. Also, LNG carriers would be responsible for adhering to the "rules of the road" for ship traffic. Section 4.3.1.4 describes safety measures to be used.

Section 4.3.4 contains information on potential impacts associated with the increased vessel traffic due to the proposed Project and mitigation measures to address such impacts.

The Applicant commissioned Det Norske Veritas to conduct vessel collision analyses using proprietary data and software. An independent evaluation of vessel collision risks was conducted for the lead agencies to support the Independent Risk Assessment, which is analysis is documented in Appendix F of Appendix C1. The Applicant's and the agencies' independent analysis were conducted using different data sets and software. In an effort to provide more information to the public, Impact MT-3 in Section

4.3.4 contains both sets of results to illustrate the range of the potential risks.

in maritime traffic, or increase hazards to marine traffic," the project's impact would be considered significant, requiring additional mitigation measures. (Revised DEIR at p.4.3-27.)

Failure to Expand ATBA and Exclusion Zone

As noted in the Public Safety section above, the Revised DEIR also fails to account for the expanded risk zone, either in terms of adequately assessing impacts given this new information, or ensuring adequate mitigation. Given the permanent presence of the FSRU, and the daily traffic of LNG tankers and support vessels, the Revised DEIR must analyze the impacts to shipping of the expanded hazard zone, and suggest mitigation measures to protect shippers and boaters from this zone.

Failure to Provide Adequate Patrolling of Safety Area

In addition, certain mitigation measures – AM MT-3a and MM MT-3h – rely on vessels patrolling the safety area to monitor marine traffic, including during docking and undocking of the LNG carriers. (Revised DEIR at p. 4.3-38 – 4.3-40.) However, the Revised DEIR does not explain what, if any, authority these vessel operators would have to actually enforce safety restrictions, and this calls into question the effectiveness of such mitigation.

Moreover, it is unclear whether these would be the same vessels already supporting the project (i.e., the two assist tugs and the crew boat) or whether these are additional vessels that are not currently accounted for in the inventory of project vessels or vessel emissions. If these are the same vessels, it may be unreasonable to assume the vessels will be able to effectively carry out both objectives, as it otherwise appears from the Revised DEIR that the assist tugs will be fully occupied assisting LNG carriers during docking, loading/unloading, and undocking. Figure 2.2-3 shows both assist tugs actively assisting an LNG carrier during "offloading" at the FSRU. The Revised DEIR does state that docking or undocking would "be aborted" if the tugs needed to intercept unauthorized vessels, but does not explain how it would be feasible to abort such activities. (Revised DEIR at p. 4.3-12.) If these vessels are intended to be in addition to the two assist tugs and the crew boat, than the Revised DEIR has failed to disclose and evaluate either the marine traffic impacts that would result or the additional air quality impacts.

G207-131 Continued

G207-131
Continued

G207-132

G207-133

G207-131 Continued

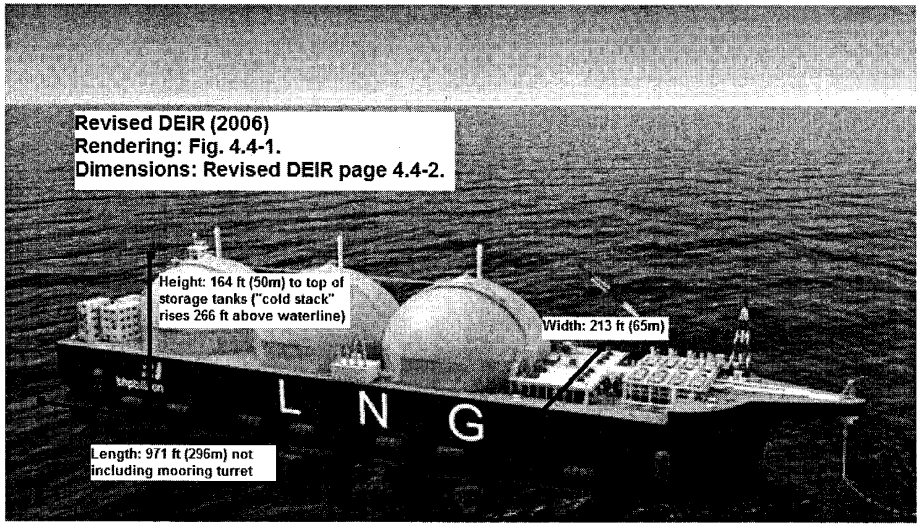
G207-132
Sections 2.2.4, 4.3.1.4, and 4.3.4 address the size of the safety zone, how it would be established, and the potential impacts on marine traffic. The FSRU would be able to rotate 360° around the mooring turret. The safety zone would extend 500 m from the circle formed by the FSRU's stern, the outer edge of the facility, rotating around the mooring turret. See Figure 4.3-4 for an illustration of the potential safety zone and area to be avoided. The safety zone could not be made any larger because its size is governed by international law.

The Office of Vessel Traffic Management of the USCG would evaluate the size of the ATBA based on location, port configuration, and size of the LNG carriers to be serviced. "The needs and desires of the operator would factor into the final decision, but a private entity cannot intrude on an established shipping lane available to all vessel operators (public, commercial, and recreational vessels)."

G207-133
During docking and undocking, the crew/support vessel would monitor the safety zone (see Sections 4.3.1.3 and 4.3.4). At least one tug would patrol the safety zone at all other times. The tug operators would notify the proper authorities if an incident occurred.

Emissions from all vessels used during operations, including those described above, are included in the vessel emissions inventory (see Section 4.6.4).

4.4 AESTHETIC IMPACTS



According to the Revised DEIR, the FSRU would be the largest visible component of the project, measuring 1,042 feet long (including the mooring turret) and 164 feet high (269 feet high, including the cold stack). (Revised DEIR at p. 4.3-19 (Figure 4.3-4), p. 4.4-2.[101]) Due to prevailing winds in the area, the most common orientation of the FSRU would be parallel to the coast, meaning that the full length of the facility would be visible to the onshore public. (Id.)

By comparison, the FSRU would be longer than three football fields, several city blocks, 25 Greyhound buses, or four Boeing 747s. The Revised DEIR compares the FSRU to offshore oil and gas platforms, and states that, "[u]nlike oil platforms along the coast, the FSRU would appear similar in shape to commercial vessels that are frequently seen in the Project area." (Revised DEIR at p. 4.4-18.) What the Revised DEIR fails to point out is that the FSRU will be much larger than an oil platform - approximately 17 times as long and just as high.

G207-134

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[101] / The "artist rendering" of the FSRU appears to misrepresent the facility in terms of scale. The FSRU will be much wider than the height of the Moss tanks, despite being given a relatively slender appearance in the image. Also, the "cold stack" venting tower near the front of the facility (in the rendering, it is apparently represented by the red and white lattice tower structure) would reach much higher than portrayed. The Revised DEIR states that it will stand about 100ft above the tops of the Moss storage tanks (the same distance as from the FSRU deck to the tops of the tanks), while the rendering appears to indicate that it is of similar height to the tanks.

G207-135

G207-134
The document does not equate the size of the proposed FSRU to that of an existing offshore oil and gas platform, but does, rightly, distinguish the different shapes of each facility with respect to aesthetic presentation and perception of viewers.

G207-135
The text on page 4.4-2 of the March 2006 Revised Draft EIR (Section 4.4.1.1) states that Figure 4.4-2 is "a representative illustration" of the FSRU. The intent of the illustration was to give a general impression of the facility. Section 4.4.1.1 gives the dimensions of the FSRU and refers the reader to Figure 2.2-1. Figure 2.2-1 shows the height of important structures above the loaded waterline and provides information on relevant dimensions. As the title states, Figure 4.4-1 is an artist's rendering, which is shown from an angled and elevated perspective making measurements inaccurate.

The FSRU will be much larger than other offshore vessels and structures

Despite its immense proportions, the Revised DEIR argues that the FSRU will not be an "anomalous structure."

> Unlike oil platforms along the coast, the FSRU would appear similar in shape to commercial vessels that are frequently seen in the Project area; therefore, it is not regarded as an anomalous structure. The FSRU would be larger than many of the vessels transiting the area but would be similar in size to oil carriers or naval aircraft carriers and thus, not unusual, given the number of vessels transiting the area daily. (Revised DEIR at p. 4.4-18.)

The Revised DEIR's claim that the FSRU will be "similar in size" to oil carriers and naval aircraft carriers is misleading. Although other marine vessels may be as long (e.g., the *USS Ronald Reagan*, the newest of the US Navy's Nimitz-class nuclear aircraft carriers, is 333 m (1092 feet) in overall length, and the Exxon Valdez oil tanker, considered a mid-sized oil carrier, measured 300m long and 50m wide (987 feet by 164 ft)), there are not that many vessels of such size in the vicinity of the project. For example, there are only nine Nimitz-class aircraft carriers in the world, which suggests that passage through the region by such a vessel would be quite rare. Large oil tankers are routed outside the Santa Barbara Channel, far from shore. The Revised DEIR presents no data on actual passage rates of oil tankers or any other vessel types that approach 300m in total length, to support the claim that these vessels are "usual" for the area.

The fact that the height of the FSRU will visually dwarf the docking carrier ships also contradicts the argument that the FSRU will not be an "anomalous structure." Heights from the waterline to the top of aircraft carriers and oil tankers are not provided in the Revised DEIR for comparison, but assuming that those vessels are roughly similar in height to LNG carrier ships (which may extend beyond 300m in length), they too will be dwarfed by the Cabrillo Port in height.

Furthermore, vessels in the project area are transient, i.e. they are not permanently emplaced within the viewshed. The permanent emplacement of the FSRU thus strongly distinguishes the Cabrillo Port from traffic of vessels that may resemble the facility. In turn, this significantly limits the extent to which aesthetic comparisons can be made for the sake of assessing impacts to the viewshed.

Comparison of FSRU size to the dimensions of other permanently emplaced marine facilities in the area also illuminates the remarkable scale of the facility. According to Kevin Drude, planner at Santa Barbara County's Energy Division, the double-decker oil platforms in the east end of the Santa Barbara Channel climb about 70 feet from the sea surface to the top of the platform decks. The slender, lattice-work drilling mast extends about 100 feet above the top of the decks.

G207-136

The comparison to an aircraft carrier or oil tankers was intended to give a frame of reference to types of ships that people are familiar with and that are similar in size to the FSRU. Typical container ships, seen frequently in the shipping channels, also present a profile that is similar to that of the FSRU, with an average length of 960'. Figure 4-6, Appendix F provides a graphic depiction of a cruise ship superimposed on the FSRU and demonstrates they are of roughly comparable size. The FSRU is also similar in size to large cruise ships seen in southern California Coastal Waters. Table 4.3-1 contains information on the numbers and representative sizes of vessels that are commonly found in the proposed Project area.

G207-137

From a viewpoint on the mainland greater than 12 NM from the FSRU, it will be virtually impossible to distinguish the profile of a visiting LNG carrier as an object separate from the FSRU, even on a clear day. Similarly, it would not be possible to discern between the characteristics of the Port and other passive vessels. Again, see Table 4.3-1 for the number and size of vessels commonly transiting the area.

G207-138

Although other vessels are transient, the approximately 5000+ annual vessel transits within the coastal traffic lanes, which are closer to shore than the FSRU, indicate that vessels are frequently visible.

G207-139

The document does not equate the size of the proposed FSRU to that of an existing offshore oil and gas platform, but does, rightly, distinguish the different shapes of each facility with respect to aesthetic presentation and perception of viewers.

Section 4.4.1.1 discusses the FSRU's position in relation to the coastline. The general orientation of the FSRU due to prevailing wind and water currents would be roughly parallel to the coast. This is the view used in simulations. Section 4.4.1.2 contains additional information on offshore views from the coastline.

Section 4.4 and Appendix F contain information on visual resources, impacts, and mitigation. Appendix F describes how visibility from various distances was evaluated and provides additional simulations prepared for viewpoints at elevated sites along the Malibu coastline and inland areas. Figure 2.2-1 shows the

height of the structures above the loaded waterline, which is also discussed in Section 4.4.1.1.

In contrast, the visually monolithic Moss storage tanks of the Cabrillo Port FSRU will reach as high as these masts, while the FSRU cold stack (visually more analogous to the drilling masts) will extend almost 100 feet taller than Channel oil platforms. At around 970 feet in length, the FSRU will extend horizontally many times longer than the oil platforms, which (according to Kevin Drude) are around 60 feet wide per side.

The FSRU will be visible from shore

The Revised DEIR states that the Cabrillo Port will be visible from many locations and many elevations throughout the surrounding marine, island, and mainland environment. The mitigation of impacts to marine viewsheds by placing the Cabrillo Port at a greater distance from shore relative to the shipping lanes and the oil platforms in the area is reduced by the immense size of the FSRU relative to existing facilities and vessel traffic.

Locations identified in Revised DEIR (pages 4.4-4 - 4.4-9) from which FSRU will be visible during daytime:

- Mandalay Shores, Oxnard
- Low medium density housing near Hollywood by the Sea and Silver Strand Beach
- Oxnard Shores Mobile Home Park
- Ormond Beach
- Latigo Point
- Corral Canyon
- Single family residential areas adjacent to Malibu Civic Center
- Pepperdine University/Malibu Bluffs ("On a clear day, from a distance of more than 19.1 NM (22 miles or 35.4 km), most of the 164-foot (50 m) main structure would be visible on the horizon [to viewers at the Malibu Bluffs]" [page 4.4-21]).
- Encinal Canyon Road, Malibu (which is approximate 15.1 miles from FSRU site)
- Pacific Coast Highway near Point Mugu, including proximate homes and businesses
- Hiking trails in the Santa Monica Mountains NRA and the 55 mile scenic corridor associated with Mulholland Drive (an area that attracts 500,000 visitors/yr)
- Leo Carrillo State Beach, and points along the PCH in this area.
- Locations within Channel Islands National Park, particularly "higher elevations on Anacapa and Santa Cruz Islands." ("At the top of Anacapa… which is about 930 feet (283 m) above sea level, the entire FSRU would be visible" [4.4-19]).

Due to lighting, the FSRU will also be visible from many of the same mainland, marine and Channel Islands locations in the night time. In addition to various flood lights on the FSRU and on docked LNG carrier ships, "the brightest onboard light would be a rotating beacon at the highest, unobstructed point on the vessel [assumed to be on the tip of the cold stack, approximately 260 ft above the water line]; this light would flash at least once every 20 seconds and would be positioned to be visible all around the horizon" (4.4-24).

Light impacts may be one of the most significant visual impacts caused by the proposed project. Already, coastal residents complain of the lights from small squid boats at the

G207-139 Continued

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G207-140

G207-140
As discussed above, the FSRU is comparable in size to many vessels using the shipping lanes (refer to Table 4.3-1). The facility is sufficiently far from key observation points, that it will not be possible to discern between the FSRU and the appearance of other vessels. See also the response to the previous comment.

G207-141

G207-141
Most of the lights onboard the FSRU are safety or work lights; all are shielded lights, to focus light on the work area and minimize the scattering of light. The brightest light on the FSRU, atop the cold stack is not a constant light (it flashes about 3 times per minute) and has a maximum range of about 10 to 12 NM (the FSRU is about 12 NM from the nearest mainland location). This light emits roughly 15,000 candela, whereas squid boats have large booms that hang out over the water with several lights on each boom.

The squid boat lights are also shielded, but this feature is often negated by the fact that the small fishing boats rock in the swells, scattering the bright light. Each squid boat employs an array of lights with a maximum 30,000 watt output (10 to 15 or more light boats commonly fish together) in waters less than 100 meters deep, often times less than a mile from shore.

For purposes of comparison, the candela is the luminous intensity, in a given direction, of a source that emits monochromatic radiation of frequency 540 1012 hertz and that has a radiant intensity in that direction of 1/683 watt per steradian. A steradian is a unit of solid angle. It is used to describe two-dimensional angular spans in three-dimensional space, analogous to the way in which the radian describes angles in a plane. Therefore, 15,000 candela has a radiant intensity of 21.96 watts per steradian. Conversely, 30,000 watts would have a luminous intensity of approximately 20.5 million candela. Thus, the light from the squid boats would be much more visible than the less intense light from the more distant FSRU.

Channel Islands. These light sources are much smaller and further from shore than the light that will emanate from the LNG terminal.

The Project will impact views from offshore

The massive FSRU and accompanying vessels will also impair views for boaters who travel offshore to enjoy scenic tranquility and beauty. The industrialization of offshore waters detracts from their views and enjoyment of the ocean experience. The Coastal Commission recently acknowledged the importance of offshore views on coastal residents and visitors.[102]

4.6 AIR QUALITY

The original Draft EIS/EIR for the Cabrillo Port project found that there would be no Class 1 (significant and unavoidable) impacts from the proposed project. The reason given for this finding was because the project would have to comply with Ventura and Los Angeles County emission reduction requirements and offset any project-related emissions. (DEIS/DEIR, p. 4.6-12 et seq.) However, the DEIS/EIR failed to provide an analysis to determine whether it was feasible for the applicant to secure the necessary emission reduction credits. In our comment letter on the DEIS/EIR, we requested confirmation that sufficient emission reduction credits would be available to adequately offset the project's emissions.

Apparently, BHP Billiton was not able to comply with the Ventura and Los Angeles County offset requirements, and therefore the applicant convinced USEPA that the Cabrillo Port project should not be subject to the same rules that would apply to any other similar source of polluting emissions. (See discussion below.) Now the Revised DEIR finds that air emissions will result in certain Class 1 impacts, but the report still fails to adequately address all of the negative air impacts of the proposed project. This omission is critical, because the Cabrillo Port project, if it is approved, would become the top polluter in Ventura County, and would contribute to existing smog problems in Ventura and Los Angeles Counties.

The recurring theme throughout the air quality section of the Revised DEIR is the consistent underestimation of air emissions, lack of meaningful impact analysis, and lack of mitigation measures, which are legally required to minimize impacts to the maximum extent feasible under CEQA. As a result, the Revised DEIR fails to disclose the true air quality impacts to the affected communities and to decision makers, undermining the purpose of both CEQA and NEPA.

The attached expert report submitted by Camille Sears, an air quality expert with over 25 years experience, provides a thorough analysis of the air quality section in the Revised

[102] / Douglas, Peter, California Coastal Commission, *Protective Views from the Ocean Under the Coastal Act*, May 3, 2004.

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G207-141
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G207-142

G207-143

G207-144

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G207-146

G207-142
Section 4.4 and Appendix F contain information on visual resources, impacts, and mitigation. Appendix F describes how visibility from various distances was evaluated and provides additional simulations prepared for viewpoints at elevated sites along the Malibu coastline and inland areas.

G207-143
The Project has been modified since issuance of the October 2004 Draft EIS/EIR. See Section 1.4.2 for a summary of Project changes. The revised General Conformity analysis concludes that all applicable Project emissions would be less than de minimis thresholds in both Ventura and Los Angeles Counties and therefore not subject to the General Conformity Rule. Sections 4.6.1.3 and 4.6.2 contain revised Project emission estimates and a revised discussion of the applicability of the General Conformity Rule to the Project, respectively. Appendix G4 contains the revised General Conformity analysis. Section 4.6.4 discusses the health effects attributed to air pollutants and includes revised impacts and mitigation measures.

The March 2006 Revised Draft EIR identified four potential Class I air quality impacts (AIR-1, AIR-2, AIR-3, and AIR-5). These four impacts are also identified as Class I impacts in the Final EIS/EIR.

G207-144
The USEPA is responsible for determining the designations of each region of the United States with respect to the National Ambient Air Quality Standards. The USEPA is also responsible for determining the Federal, State, and local air quality laws and regulations that are applicable to deepwater ports, including Cabrillo Port.

See the response to the preceding comment.

G207-145
While we do not concur with the comment, the Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures. Section 4.6.4 discusses the health effects attributed to air pollutants and includes revised impacts and mitigation measures.

G207-146

In March 2006, the USCG and MARAD solicited public input on a Draft General Conformity Determination, which concluded that NOx emissions generated from Project construction activities in Los Angeles County were subject to the General Conformity Rule. All other Project-related emissions were determined not to be subject to the General Conformity Rule. Subsequent to the issuance of the Conformity Determination, BHPB provided a written commitment that all onshore pipeline construction equipment would, to the extent possible, utilize engines compliant with USEPA Tier 2, 3, or 4 non-road engine standards with Tier 2 being the minimum standard for any engine.

Project emissions were then reanalyzed to assess the potential emission reductions associated with the stated commitment and to reassess the applicability of the General Conformity Rule. The revised General Conformity analysis concluded that all applicable Project emissions would be less than *de minimis* thresholds in both Ventura and Los Angeles Counties and, therefore, not subject to the General Conformity Rule. Based on this conclusion, the USCG and MARAD will not finalize the Draft General Conformity Determination.

Section 4.6.1.3 and Section 4.6.2 contain revised Project emission estimates and a revised discussion of the applicability of the General Conformity Rule to the Project, respectively. Appendix G4 contains a copy of the revised General Conformity analysis.

DEIR and exposes the many deficiencies which would result in unmitigated air quality impacts to the affected communities.[103] These comments are referenced throughout this letter, and Ms. Sears' May 5, 2006 comment letter in its entirety is also incorporated herein by reference.

The deficiencies identified in this comment letter also pertain to the USCG's General Conformity Determination under the Clean Air Act, and EDC intends that these comments on the air quality portion of the Revised DEIR be considered by the USCG for its General Conformity Determination. [104] In addition, EDC previously submitted comments to the USCG regarding its March 2006 Draft General Conformity Determination. [105] These comments also pertain to the Revised DEIR and EDC's letter in its entirety is incorporated herein by reference.

4.6.1.2 Existing Air Quality

The Description of Existing Air Quality Fails to Disclose the General Onshore Wind Flow Pattern and its Effect on the Transport of Offshore Emissions

The Revised DEIR describes weather patterns in Ventura County and the South Coast Air Basin. (Revised DEIR at p. 4.6-3 – 4.6-5.) However, this discussion omits any explanation of the general onshore wind flow experienced in these areas and the fact that project emissions generated offshore will blow onshore and contribute to the ozone problem in Ventura County and the South Coast Air Basins.

Numerous studies demonstrate that, due to prevailing wind patterns, offshore emissions will transport onshore and impact mainland air quality. Ms. Sears describes multiple published, peer reviewed studies and meteorological analyses, all of which demonstrate that "offshore emissions in the Project area are part of the onshore ozone nonattainment problem."[106] Ms. Sears' report provides substantial evidence that offshore emissions will flow onshore and contribute to the ozone non-attainment status of both Ventura County

[103]/ Sears, Camille, *Letter to Mr. Dwight E. Sanders (California State Lands Commission) Re: State Clearinghouse Number 2004021107: Cabrillo Port Liquefied Natural Gas Deepwater Port Project Revised Draft Environmental Impact Report Comments*. May 5, 2006. Hereafter referred to as "Sears 2006."

[104]/ The Coast Guard has indicated that comments related to the General Conformity determination "will be accepted until the end of the DEIR comment period." Prescott, M.A. (USCG), *Letter to Karen M. Kraus (Environmental Defense Center) Re: General Conformity Information Regarding Cabrillo Port LNG Project*. March 22, 2006.

[105]/ Kraus, Karen (EDC) and Roessler, Alicia (EDC), *Letter to Lt. Ken Kusano (USCG) RE: Docket No. USCG-2004-16877 – Draft General Conformity Determination for the Cabrillo Port Liquified Natural Gas Deepwater Port Project (March 2006).* April 13, 2006. Hereafter referred to as "Kraus 2006."

[106]/ Sears 2006 at 4-8.

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G207-146 Continued

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G207-147

G207-147
Section 4.1.8 contains a detailed description of the marine climatic setting for the proposed Project. Section 4.6.1.2 has been revised to provide an expanded discussion of the potential transport of offshore air pollutant emissions to onshore areas due to meteorological conditions.

and Los Angeles County.[107] In fact, she opines that offshore sources contribute as much as onshore sources to the ozone problem.[108] She further concludes that "emissions from the Project area will blow onshore roughly 80 per cent of the time."[109] Ms. Sears demonstrates that her conclusions are consistent with analysis and testing conducted by the California Air Resources Board's (CARB) which has found that:

> For stations near the proposed Project, the prevailing wind direction (direction with the highest percent of frequency) blows onshore every month of the year at Santa Barbara, 11 months of the year in Oxnard, nine months of the year at Pt. Mugu Naval air Station, and 11 months of the year at Santa Monica. [110]

This information is relevant for determining the scope of project impacts and how such impacts should be mitigated, particularly impacts from the FSRU and marine vessels which would emit most of the NOx pollution. The impacts from emissions initially generated offshore and appropriate mitigation are discussed below.

The FSRU Location is inaccurately described in the Revised DEIR

The Revised DEIR's description of the FSRU location is inaccurate and misleading. The Revised DEIR states that the FSRU would be located in Federal waters "between Anacapa Island and San Nicolas Island." (Revised DEIR at 4.6-5). The FSRU is not "between" Anacapa Island and San Nicolas Island. It is located over 19 NM east of both islands. (Revised DEIR, Figure ES-1.) Moreover, the FSRU would be closer to the mainland shore than it would be to either one of these Islands. The FSRU location is only 12.1 NM from the LA / Ventura County line (falling just .4 miles west into Ventura County). (Revised DEIR, Figure ES-1). In contrast, the FSRU location is 18.61 NM east of Anacapa Island, and almost 43 NM northeast of San Nicolas Island. (Revised DEIR, Figure ES-1.) The purpose of the Revised DEIR is to accurately report the project setting so that air quality and other impacts are accurately described and evaluated. However, this inaccurate description of the FSRU misleads the public and decision makers by creating a perception that the project activities would take place much further from mainland areas with poor air quality.

The Revised DEIR falsely reports that the Channel Islands meet federal air quality standards

The Revised DEIR uses Table 4.6-2 to summarize the air quality designations for Ventura County, the Channel Islands (which are part of Ventura County) and a portion of

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[107]/ Sears 2006 at 5. Ms. Sears' analysis focuses on ozone precursor emissions. Figures 1-1 through 1-16 in Appendix G-7 of the Revised DEIR demonstrate that other criteria air pollutants also would be transported onshore and increase onshore air concentrations. Id. at 7.
[108]/ Id. at 3.
[109]/ Id. at 6-7.
[110]/ Id. at 7.

G207-147 Continued

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G207-148
The analyses and impacts in the March 2006 Revised Draft EIR are based on the precise location of the FSRU. However, Section 4.6.1.2 has been revised with a more detailed description of the proposed FSRU location to provide additional clarity.

G207-149
Sections 4.6.1.3 and 4.6.2 contain revised information on the air quality designations for the Channel Islands that are within the boundaries of Ventura County (Anacapa and San Nicolas Islands). The determination of the air quality designations of the Channel Islands, including those in Ventura County, with respect to National Ambient Air Quality Standards, is under the jurisdiction of the USEPA.

Los Angeles County within the South Coast Air Basin. The Revised DEIR states that it is relying on 40 CFR § 81.305 – which contains the USEPA attainment designation for each pollutant for the Channel Islands. (Revised DEIR at 4.6-6.) However, Table 4.6-2 incorrectly reports that USEPA has designated the Channel Islands as "attainment" for each criteria pollutant except for SO2. In fact, 40 CFR § 81.305 actually designates the Channel Islands as "unclassifiable/attainment" for each criteria pollutant. This inaccuracy misleads the public by reporting that air quality on the Channel Islands meets federal air quality standards by designating it as in attainment, when in fact the designation of "unclassifiable" is a designation given by USEPA when there is no data to support that it either meets or fails to meet national air quality standards.[111] This false reporting appears to be an attempt to inappropriately support USEPA's permitting decision to exempt the project's emissions from New Source Review by attributing it to sources regulated on Anacapa Island. The role of the Revised DEIR is to inform the public about the air quality impacts of the project and to provide an accurate account of the regulatory setting. The Revised EIR instead presents misleading and false information.

4.6.1.3 Regulated Air Pollutant Emissions

Construction Activities

Emissions from construction are underestimated in the Revised DEIR. Ms. Sears reports that the construction emissions are underestimated in the Revised DEIR on the basis of two deficiencies: 1) the construction schedule is grossly optimistic; and 2) the emissions cannot be verified.[112] Ms. Sears identifies several scenarios in which the construction schedule is too optimistic, resulting in an unreasonably low estimate of NOx emissions.[113] The Revised DEIR fails to provide any supporting documentation for these estimates other than BHP Billton's unverified assumptions.

These deficiencies result in significantly less than realistic projected emissions from construction. Although the Revised EIR classifies the existing emissions as a Class I impact, CEQA requires that the emissions be accurately reported and mitigated to the maximum extent feasible. Effective mitigation is undermined if the Revised DEIR underestimates emissions.

Stationary Operations (FSRU & Vessels)

FSRU Emissions

[111] / As identified and analyzed in Ms. Sears' Report, the data collected on Anacapa Island before the air monitor was removed in 1992 reported several national and state air quality violations.
[112] / Sears 2006 at 11-12.
[113] / Id.

G207-149 Continued

G207-149 Continued

G207-150

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G207-150
Section 4.6.1 contains revised information to clarify that the Channel Islands are designated as unclassifiable/attainment for National Ambient Air Quality Standards.

The USEPA has made a preliminary determination that the FSRU should be permitted in the same manner as sources on the Channel Islands that are part of Ventura County. Section 4.6.2 contains an updated discussion of relevant regulatory requirements, including emission offset requirements, and proposed emission reduction measures.

G207-151
The emissions analyses are derived from and consistent with historic operation and construction schedules of comparable projects that incorporate typical deviations from normal conditions.

The emissions associated with the onshore construction are identified within Section 4.6 and, as indicated within the discussion of Impact AIR-2, the potential impacts, even with feasible mitigation, remain potentially significant (Class I).

Also, the Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures.

The estimates for FSRU emissions rely on incorrect assumptions. As a result, the Revised DEIR underestimates FSRU emissions.

For example, the DF 50 Wartsila main generator engines, that make up part of the FSRU emissions, are calculated using the wrong emission factor.[114] The Revised DEIR calculated NOx emissions using an emission factor that is only valid for engines running at a 90% load, but the engines at the FSRU will only operate at an average load factor of 51.2 %.[115] Thus, the Revised DEIR is missing information necessary to accurately estimate the correct emissions from the Wartsila engine operating at 51.2 % load as part of the FSRU operations.[116] Moreover, "since NOx concentration usually increases as the load level decreases, the Project NOx emissions are likely to be underestimated" as a result of this error.[117] The Revised DEIR must rely on emissions factors consistent with load factors for the Cabrillo Port Project. This information is necessary in order to identify the full extent of Project impacts and to appropriately mitigate the Class 1 impacts caused by the FSRU emissions as required by CEQA.

We are concerned that the Revised DEIR may similarly rely on improper assumptions to estimate SCV engine emissions, but we are unable to independently verify this because the Revised DEIR fails to disclose the underlying basis for these calculations. Given that the Revised DEIR relies on inappropriate emissions assumptions multiple times, we think it is more than likely that similar mistakes were made in the estimate of SCV engine emissions. Errors regarding SCV emissions could significantly change the picture of Project impacts as SCV emissions comprise the bulk of FSRU emissions.

Additionally, the Revised DEIR discusses an "emission control technology analysis" supplied by the applicant that purports to identify methods to reduce emissions from FSRU equipment. (Revised DEIR at 4.6-13 and 4.6-14.) Although this analysis is relied upon in the Revised DEIR, it is not attached or disclosed in the Revised DEIR for the public to review. This is in direct violation of DPA regulation 33 CFR 148.710 which requires the applicant to demonstrate "that the deepwater port will be fabricated, constructed, operated, and decommissioned using the best available control technology to prevent or minimize adverse impact on the environment (33 U.S.C. 1503 (c) and 1504)" and that this "criteria must be considered in the preparation of a single detailed environmental impact statement . . ."

Both CEQA and the Deepwater Port Act require the applicant to utilize best available control technology in order to mitigate impacts and obtain a Deepwater Port License. This information must be included in the Revised DEIR so it can be subject to public review and consideration by the appropriate decision makers.

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[114]/ Id. at 12 -13.
[115]/ Id.
[116]/ Id.
[117]/ Id. at 13.

G207-151 Continued

G207-151 Continued

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G207-153

G207-152
The USEPA Region 9 issued a draft Proposed Authority to Construct (i.e., draft air permit-to-construct) for the Cabrillo Port FSRU. Condition V.A.1 of the draft air permit-to-construct contains specific emission limits on air pollutant concentrations in exhaust from the Wartsila Generators (with control equipment) and Submerged Combustion Vaporizers (SCVs). These limits do not vary with equipment load. Thus, the effective limits on allowable air pollutant mass rates (in terms of pounds per hour) would decrease with lower equipment loads. Condition VI.B of the draft air permit-to-construct contains specific stack testing and/or continuous emission monitoring requirements for air pollutant emissions from the Wartsila Generators (with control equipment) and SCVs.

G207-153
The emission control technology analysis was submitted to USEPA Region 9 as part of the Applicant's Minor New Source Review Construction Permit Application and was used as a reference in Section 4.6. A copy of the permit application is available at www.epa.gov/region09/liq-nat-gas/cabrillo-air.html.

Vessel Emissions

The Revised DEIR fails to disclose the full extent of vessel emissions related to the Cabrillo Port Project.[118] As a result the Revised DEIR fails to disclose the full extent of emissions, particularly ozone precursor emissions (i.e., NOx and ROC) associated with the Cabrillo Port Project.

The Revised DEIR relies on several unsupported and unreasonable assumptions to estimate vessel emissions.

First, the Revised DEIR uses incorrect and inapplicable emission factors to calculate the LNG carrier emissions.[119] An emission factor "is used to calculate the amount of air pollutants emitted by burning a given amount of fuel."[120] The emission factors used to calculate LNG carrier emissions in the Revised DEIR, however, were developed from engine types and fuel content that are markedly different from the LNG carriers.[121] These emission factors "apply to relatively small gas compressor engines, not extremely large tanker propulsion units."[122] The average size of these engines is "only about 2.7 percent of the Project LNG Carrier horsepower rating (60,000 hp)."[123] Moreover, the emission factors were developed based on engines using only natural gas, not the fuel mix of 99% natural gas and 1% diesel fuel proposed for this project.[124] The Revised DEIR estimates of LNG carrier emissions are, thus, utterly unreliable.[125] Estimates for project tug emissions suffer from the same problem.[126] The Revised DEIR must utilize emission rates "obtained from source-tests or vendor specifications for the engines being proposed" in order to develop reliable, accurate estimates of LNG carrier and project tug emissions.[127]

G207-154

Second, the estimates of vessel NOx emissions are based on the unreasonable assumption that the natural gas fueling the vessels will have a heating value lower than 1,360 on the Wobbe index, such as that supplied by the Scarborough field in Australia. (Revised DEIR

G207-155

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[118] / This discussion assumes that the vessel inventory identified in the Revised DEIR is accurate. However, as discussed previously, certain marine traffic mitigation measures – AM MT-3a and MM MT-3h – rely on vessels patrolling the safety area to monitor marine traffic, and it is unclear whether these would be the same vessels already supporting the project (i.e., the two assist tugs and the crew boat) or whether these are additional vessels that are not currently accounted for in the inventory of project vessels or vessel emissions. If these vessels are intended to be in addition to the two assist tugs and the crew boat, than the Revised DEIR fails to disclose and evaluate the full extent of vessel emissions.

[119] / Sears 2006 at 13-15.

[120] / Id. at 13.

[121] / Id. at 14-15.

[122] / Id. at 14.

[123] / Id.

[124] / Id.

[125] / Id.

[126] / Id. at 14.

[127] / Id. at 14-15.

G207-154
The Project has been modified since issuance of the March 2006 Revised Draft EIR. The Applicant has revised the emission estimates for the LNG carriers based on emission factors related to emission data provided by Wartsila, a manufacturer of dual fuel marine engines. Section 4.6.1.3 contains revised information on Project emissions. Appendix G2 provides detailed emission calculations for Project operational equipment and vessels and a summary of relevant emission factors.

G207-155
Boil-off gas is produced from the volatilization of components of LNG. Since the LNG is stored at a very low temperature and high pressure, it is anticipated that the boiling points of higher chain hydrocarbon components of the LNG (e.g., propane) would not be exceeded. Thus, the boil-off gas would be comprised primarily of methane and ethane with corresponding low heating values.

at p. 4.6-24.) The Revised DEIR itself notes that Scarborough natural gas may not be available, and that the "precise heat content" of the natural gas to be imported by the Cabrillo Port project is unknown. (Revised DEIR at p. 2-14 and 4.6-24.) The LNG carriers would be using boil-off gas generated from the LNG carrier storage tanks as the primary source of their natural gas fuel. [128] (Revised DEIR at p. 4.6-15.) As of May 1, 2006, the specific source of natural gas imported by this project is still undetermined.[129] USEPA has recently stated that the gas "will be imported to the U.S. from Malaysia, Indonesia and Australia."[130] Thus the natural gas used to operate the LNG carriers may not, in fact, have a heating value lower than 1,360 Wobbe.

Combustion of natural gas with higher heating values "results in increased combustion temperature and, possibly, increased NOx emissions." (Revised DEIR at p. 4.6-24.) Project vessels utilizing hotter gas, therefore, could have increased NOx emissions.[131] To accurately describe project emissions, the Revised DEIR must identify all possible sources of Cabrillo Port project natural gas and calculate the LNG carrier emissions based on each source of natural gas.[132] It is unreasonable for the Revised DEIR to simply dismiss the potential for increased NOx emissions as "speculative" when the Revised DEIR itself acknowledges that such increased emissions are possible, and there is nothing in the project description that would limit the applicant from utilizing natural gas with higher heating values. (Revised DEIR at p. 4.6-24 and 2-14.)

The Revised DEIR also omits significant categories of marine vessel ozone precursor emissions.

First, the Revised DEIR does not identify emissions from LNG carrier generator or auxiliary boiler emissions.[133] These are "typical components" of such carriers, and omitting such generator or auxiliary boiler emissions results in an underestimate of project emissions.[134]

Second, the Revised DEIR only estimates vessel emissions that would occur within 25 nautical miles of the coast of California (29 miles), and it therefore fails to disclose the full extent of vessel emissions that would affect onshore areas, particularly areas in nonattainment for state and federal ozone standards.[135] (Revised DEIR at p. 4.6-16.)

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[128]/ The Revised DEIR does not specify whether the tugboats and crew/supply boats would use natural gas imported by the Cabrillo Port Project. (Revised DEIR at p. 4.6-15 – 4.6-16.)

[129]/ Nelson, Neely (Exxon). Personal communication to Susan Jordan (CCPN). May 1, 2006; see also comments above regarding project description.

[130]/ U.S. EPA, *Cabrillo Port Air Permit: Fact Sheet on Proposed Cabrillo Port,* http://www.epa.gov/region9/liq-natl-gas/index.html. May 2006.

[131]/ Sears 2006 at 18.

[132]/ Id.

[133]/ Sears 2006 at 15.

[134]/ Id.

[135]/ Although we disagree with the Revised DEIR's estimate of vessel emissions, we agree that it is proper to identify and evaluate emissions from all vessels and vessel activities associated

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G207-156
Section 4.6.1.3 contains updated information on the LNG carrier engine configurations and associated emissions. A combination of purpose-built vessels (those constructed exclusively for the Project) and other vessels not dedicated to the Project would deliver LNG to the FSRU. Contracts with vessel operators would require all LNG carriers to be powered exclusively by Wartsila 50DF series dual-fuel electric engines or equivalent dual-fuel electric engines. The LNG vessels would be equipped with an array of dual-fuel electric engines of varying sizes to provide power for propulsion as well as auxiliary systems on the vessel. The vessels would not be fitted with auxiliary boilers or generators.

G207-157
The Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. LNG carriers associated with the Project would operate on natural gas (boil-off gas from the LNG cargo) with 1 percent diesel pilot during all operations in California Coastal Waters. Section 4.6.1.3 contains information on emissions from LNG carriers operating in California Coastal Waters, as defined by the California Air Resources Board.

G207-158
AM AIR-5a in Impact AIR-5 in Section 4.6 of the March 2006 Revised Draft EIR contains information on this topic. However, as previously stated, the Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Tugs and crew vessels would have diesel engines equipped with air pollution control technology that would result in emissions comparable to emissions from natural gas-fueled engines.

G207-159
Section 4.6.1.3 contains revised information on Project emissions and proposed control measures. The emission summaries in this section incorporate all emissions expected to occur in California Coastal Waters, as defined by the California Air Resources Board.

As discussed previously, numerous studies demonstrate that offshore emissions will transport onshore and impact mainland air quality. This is not a phenomenon that only occurs closer to shore. CARB has concluded that emissions within up to 102 miles off the California coast (ranging coast-wide from 24 NM to 90 NM, or 27 to 102 miles) "are likely to be transported ashore and affect the air quality in California's coastal air basins, particularly during the summer."[136] CARB refers to this area as "California Coastal Waters," and the establishment of this area is based on:

> [O]ver 500,000 island, shipboard, and coastal meteorological observations. These data were taken from official records of a number of agencies including the U.S. Weather Bureau, Coast Guard, Navy, Air Force, Marine Corps, Civil Aeronautics Administration and Army Air Force.[137]

CARB has recently reaffirmed its broad definition of California Coastal Waters in a 2005 proposed regulation to address diesel emissions from marine vessel auxiliary engines. [138]

Although the Revised DEIR does acknowledge onshore impacts from both the FSRU and project vessels, the emission estimates only include vessel emissions that would occur within 25 nautical miles (29 miles) of the California coastline. (Revised DEIR at p. 4.6-33 – 4.6-35 and 4.6-16.) However, project emissions – namely, emissions from LNG carriers – will occur well beyond this area. (See, e.g., Revised DEIR Figure 4.3-2 (LNG Carrier Approach Routes).) Excluding these emissions from the environmental analysis

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with the project (i.e., LNG carriers, tugboats, and crew/supply boats). We understand that BHP Billiton has argued, particularly with respect to its Clean Air Act permit, that certain vessel emissions should not be included in the Cabrillo Port Project's "potential to emit." Whether or not this is correct under the Clean Air Act, the proper standard under CEQA and NEPA is to identify and evaluate all project emissions that may have a significant environmental impact. As discussed below, all vessel emissions associated with this project have the potential to impact onshore air quality and must be identified and evaluated during environmental review of this Project.

[136]/ Sears 2006 at 8; see also, pp. 78-110 of CARB, *Report to the California Legislature on Air Pollutant Emissions From Marine Vessels*. Vol. 1. June 1984. [SEE Attachments to Kraus 2006]. Hereafter referred to as "CARB 1984"; Appendix B/Attachment, fn 1 in Scheible, Michael H. (Deputy Executive Officer, California Air Resources Board), *Letter to Renee Klimczak (President, BHP Billiton LNG International Inc.)*. January 31, 2006. Hereafter referred to as "Scheible 2006." Within the Project area, the range of California Coastal Waters extends as far as 90 miles from the California coastline. CARB 1984 at 79.

[137]/ CARB 1984 at 80; see also, Scheible 2006 (". . . . unmitigated marine vessel emissions that are emitted within California Coastal Waters would add to the air pollution burden in California and should be mitigated.").

[138]/ CARB, *Initial Statement of Reasons for Proposed Regulations to Reduce Emissions from Auxiliary Diesel Engines and Diesel-Electric Engines Operated on Ocean-Going Vessels within California Waters and 24 Nautical Miles of the California Baseline*. December 8, 2005. [Attachment to Kraus 2006].

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The area of California Coastal Waters in which emissions would be mitigated was determined in conjunction with the California Air Resources Board (Simeroth 2005) as discussed in Impact AIR-5 in Section 4.6 of the March 2006 Revised Draft EIR.

However, as previously stated, the Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. LNG carriers associated with the Project would operate on natural gas (boil-off gas from the LNG cargo) with 1 percent diesel pilot during all operations in California Coastal Waters. Section 4.6.1.3 contains revised information on emissions and proposed control measures from LNG carriers operating in California Coastal Waters, as defined by the California Air Resources Board. The emission summaries in this section incorporate all emissions expected to occur in California Coastal Waters.

disregards the substantial evidence demonstrating that project emissions in areas up to 90 miles from the coastline will transport onshore and impact onshore air quality.

Moreover, it is unknown whether LNG carriers will be operating on natural gas or diesel fuel once they travel beyond 25 nautical miles from the coastline.[139] Vessels operating primarily on diesel fuel will generate significantly higher NOx emissions.[140]

Ms. Sears has calculated the increase in project emissions if vessel emissions estimates properly account for emissions beyond the 25 NM mark. She has conservatively calculated emissions for vessels only within 75 miles of the California coast and concluded that total vessel NOx emissions with natural gas as the primary fuel would be 197 tons per year.[141] If primarily diesel fuel is used beyond 25 NM, NOx emissions would increase to 507 tons per year.[142]

Even conservatively assuming that LNG carriers will utilize natural gas, including all LNG carrier emissions within California Coastal Waters almost triples the Revised DEIR estimate of NOx emissions. The use of diesel fuel increases the emissions estimate by a factor of 7.[143] Thus, the Revised DEIR dramatically underestimates the NOx emissions that would result from vessels associated with the Cabrillo Port project. These emissions must be included and evaluated in the environmental review for this project. As discussed below, these offshore emissions exceed CEQA significance thresholds and would appreciably impact the onshore air quality of areas that are in nonattainment for federal and state ozone standards.

The Revised DEIR fails to Estimate Emissions Increases from Residential and Industrial Users of Cabrillo Port Natural Gas

The importation of gas with higher heating values, or "hot gas," through the Cabrillo Port project may cause additional and unaccounted emissions and air quality impacts that are not disclosed in the Revised DEIR. As discussed above, BHP Billiton has not committed to importing gas from any specific source. (Revised DEIR at 4.6-24.) In fact, the project description states that the applicant may import gas from Indonesia if it cannot get "high quality" gas from the Scarborough field in Australia. (Revised DEIR at 2-14.) Malaysia has also been identified as a source of gas for this project.[144] BHP Billiton has admitted

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[139]/ Klimczak, Renee (President, BHP Billiton LNG International), *Personal Communication to Linda Krop (Environmental Defense Center).* April 21, 2006. See also, Revised DEIR at 4.6-15 ("the applicant has proposed to use natural gas as the primary fuel in the main and auxiliary engines on the LNG carriers . . . *while these vessels are berthed at the FSRU or operating within 25 NM (29 miles or 46 km) of the coast of California*" (emphasis added)).

[140]/ Sears 2006 at 17.

[141]/ Id. at 16.

[142]/ Id. at 17.

[143]/ Id. at 16-17.

[144] / U.S. EPA, *Cabrillo Port Air Permit: Fact Sheet on Proposed Cabrillo Port,* http://www.epa.gov/region9/liq-natl-gas/index.html. May 2006.

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As indicated in Section 4.6.2, the natural gas imported by the proposed Project would need to meet the requirements of Rule 30 and General Order 58-A of the California Public Utilities Commission (CPUC) or it could not be accepted for distribution by SoCalGas. Rule 30, as described, has specific requirements, including a heating value range.

Section 4.6.2 contains additional information on the regulatory setting affecting air quality and a revised discussion of the heating value of imported natural gas that incorporates the recent rulemaking by the CPUC. An analysis of the impacts of the CPUC rulemaking is beyond the scope of this document as required by NEPA and the CEQA.

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in correspondence with the South Coast Air Quality Management District ("SCAQMD") that it will not voluntarily condition the DPA license on exclusive importation from Scarborough in Australia since the development of that field is uncertain.[145] As of May 1, 2006, the specific source of natural gas imported by this project is still undetermined.[146] Thus the natural gas imported by the Cabrillo Port project may not, in fact, have a lower heating value.

According to testing conducted by SCAQMD, "the combustion of natural gas with uncharacteristically higher heating values could increase stationary source NOx emissions by greater than 20%. . ." (Revised DEIR, p. 4.6-24.) The Santa Barbara Air Pollution Control District and Southern California Gas Company share these same concerns regarding fluctuating gas quality and its polluting impacts.[147] Importantly, BHP has refused to install equipment that would strip out LNG components to reduce its heat value and provide cleaner gas, irrespective of source, as another LNG project applicant, Sound Energy Solutions, is feasibly doing as part of its project in Long Beach.[148]

Thus, the use of imported hot gas from Cabrillo Port in both residential and non-residential natural gas fired equipment could release increased NOx emissions that will cause additional unmitigated air quality impacts.[149] These impacts could occur in the Ventura County Air Pollution Control District (VCAPCD), the SCAQMD, or any other ozone non-attainment areas that would import gas from Cabrillo Port.[150] This is a concern that SCAQMD shares regarding the importation of LNG from Cabrillo Port.[151]

These potential increases in NOx emissions have not been identified or evaluated in the Revised DEIR. The Revised DEIR must, at a minimum, calculate and disclose NOx emissions resulting from the importation of Indonesian gas since it, and the applicant, disclosed that it is just as likely Cabrillo Port would import lower quality gas from Indonesia as part of the project description. The Revised DEIR must also identify any other possible source locations for project gas and calculate the resulting area-wide

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[145]/ Wood, Thomas (Stoel Rives), *Letter to Dr. Barry R. Wallerstein (South Coast AQMD) Re: Cabrillo Port LNG Terminal.* Sept. 23, 2005.

[146]/ Nelson, Neely (Exxon), *Personal communication to Susan Jordan (CCPN). May 1, 2006.*

[147]/ Murphy, Tom (Santa Barbara County Air Pollution Control District), *Letter to Lt. Ken Kusano (USCG) and Mr. Cy Oggins (SLC) RE Supplemental Comments on Cabrillo Port Deepwater Port License Application: DEIS/DEIR.* Feb. 25, 2005.

[148]/ Nazemi, Mohsen (EPA Region 9), *Email RE BHP Billiton Cabrillo Port LNG Deepwater Port.* Sept. 26. 2005; *Wood, Thomas, Email RE BHP Cabrillo—Gas Questions.* Sept. 29, 2005.

[149]/ Sears 2006 at 18-19.

[150]/ Id. at 19.

[151]/ South Coast Air Quality Management District (SCAQMD), *Responsive Testimony of SCAQMD to Testimony and Proposal of San Diego Gas and Electric Company and Southern California Gas Company.* September 23, 2005. [SEE Attachments to Kraus 2006].; Liu, Chung S. (Deputy Executive Officer, Science & Technology Advancement, SCAQMD). 2006. Letter to Michael H. Scheible (Deputy Executive Officer, CARB). February 9 [SEE Attachments to Kraus 2006].

emissions and impacts cause by the use of gas from each source field.[152] Contrary to assertions in the Revised DEIR, disclosure of this information is not any more "speculative" for the applicant to provide than it was for it to provide gas quality values for Scarborough Field's gas. (Revised DEIR at 4.6-24.) Moreover, mitigation of these emissions is not beyond the jurisdiction of the USCG and CSLC. These emissions are part of the project's total emissions and are required to be disclosed and mitigated in the Revised EIR and the Final EIS before the applicant can obtain a DPA license from USCG and MARAD and prior to any final action by decision makers such as the CSLC and the California Coastal Commission.

FSRU Start-Up Activities Emissions

The Revised DEIR distinguishes start-up emissions from both construction and operation emissions. (Revised DEIR at 4.6-16.) There is no justification or regulation cited in the Revised DEIR as to why these emissions should be evaluated separately. More importantly, as discussed below in our comments related to Section 4.6.4, the Revised DEIR fails to consider any start-up emissions in its analysis of air quality impacts. The start-up period is assumed to last approximately 60 days and emit 42.3 tons of NOx. These are significant emissions that would cause air quality impacts and must be mitigated.

4.6.1.4 Greenhouse Gas Emissions

Total Greenhouse Gas Emissions from the Project are Understated

As noted above, the Revised DEIR fails to consider the direct and indirect impacts that will result from the proposed project. The subject of climate change and greenhouse gas emissions is one of the most significant omissions in the EIR. For example, although this section purports to disclose greenhouse gas emissions, it actually identifies ***only 1.5% of the total project greenhouse gas emissions,*** considering the full supply chain.[153]

Contrary to the assertions of project proponents, LNG is not a "clean" fuel source. In fact, LNG is a fossil fuel and intensifies the pollution and global warming impacts of natural gas due to the need to liquefy, transport, and regasify the gas prior to bringing it to market.

> LNG uniquely increases the emissions of CO2 into the atmosphere. The composition of natural gas emissions are identical whether it has been converted to LNG or burned straight from gas. However, the processes necessary to convert and transport LNG are energy intensive….the process of converting natural gas into a liquid, transporting it across the Pacific Ocean, and then returning it to its gaseous form, known collectively as the "LNG supply chain," required an

[152]/ Sears 2006 at 19.
[153] / Heede, Rick, Climate Mitigation Services, *LNG Supply-Chain Emissions: Australia to Offshore Ventura,* May 7, 2006.

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Section 4.6.4 provides a revised discussion and analysis of the air quality impacts associated with FSRU start-up emissions. FSRU start-up emissions are distinguished from normal FSRU operational emissions because start-up emissions are a one-time occurrence and distinguished from construction emissions because the emissions are associated with operational activities.

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As stated in Section 4.6.4, in addition to regulated air pollutants, the Project would generate emissions of the greenhouse gases CO_2 and methane (natural gas). The CO_2 emission coefficient for natural gas is 117. Coal (approximately 78 percent carbon) and oil (approximately 85 percent carbon) have higher carbon contents (more pounds of carbon per MMBtu) than natural gas (approximately 75 percent carbon), which leads to greater carbon emissions when combusted (more tons of CO_2 per megawatt hour produced). For comparison, the CO_2 emission coefficient for No.2 fuel oil and anthracite coal are 161, and 227 pounds of CO_2 per MMBtu, respectively.

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If the proposed Cabrillo Port Project is not approved, SoCalGas may obtain its gas from elsewhere in North America. In this scenario, the combustion would occur anyway, i.e., would be in the baseline scenario. In the absence of the Cabrillo Port Project, it is also highly unlikely that the natural gas would be left in the ground in Western Australia; it would likely be extracted, liquefied, transported, and sold elsewhere. For the proposed Cabrillo Port Project, the additional life cycle emissions that can be attributed specifically to the Project would be only the portion of those emissions that would be generated by transporting the LNG across the Pacific Ocean to the Cabrillo Port facility. If the LNG were imported into a different receiving facility in California, the GHG emissions would be the same as those of the proposed Project.

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> increased natural gas consumption of 18 – 22 percent. An additional 11 to 18 percent increase in CO2 emissions is likely to occur because of high CO2 content in the raw source gas being converted to LNG and exported to Mexico. The CO2 in the source gas may be vented to atmosphere during processing.
>
> The combined impact of venting CO2 during processing and the energy penalty of the LNG supply chain would increase CO2 emissions by roughly 20 to 40 percent over California's current emissions from domestic sources of gas []. This increase significantly closes the gap between coal and natural gas with respect to global warming gases.[154]

Due to this concern, CCPN and EDC hired Rick Heede of Climate Mitigation Services to quantify the greenhouse gas emissions that will result if the Cabrillo Port project is constructed. Mr. Heede is an expert in conducting comprehensive greenhouse gas emissions inventories and identifying technologies and strategies to reduce such emissions. The attached report addresses the total greenhouse gas emissions from the project, including emissions from natural gas production at the Scarborough offshore gas field, transportation of the natural gas by subsea pipeline to the proposed LNG plant at Onslow, gas processing and liquefaction at Onslow, shipment of the LNG 9,000 miles from Australia to California, regasification at the FSRU, delivery into the SoCalGas system, and consumption by end users. According to Mr. Heede's analysis, ***the supply chain emissions for the proposed project will range between 23,564,431 and 26,728,883 U.S. tons per year.***[155] This range reveals a conservative estimate that assumes state-of-the-art technology for the processing and liquefaction plant in Onslow (even though the design information is not yet available), and does not include emissions from materials embodied in the supply chain or travel by BHP employees and construction crews.[156]

The greenhouse gas emissions from the project come primarily from carbon dioxide, which is released as an essential byproduct of combustion. Carbon dioxide is also released during propulsion of the LNG tankers, operation of the liquefaction plant, production activities, pipeline use, and operations on the FSRU. Methane is also a greenhouse gas, and is vented from the gas processing plant. Methane leaks are quite common from gas pipelines, storage tanks, compressors, valves, and seals. Methane contributes 23 times the greenhouse gas effect as compared to carbon dioxide, so even if emissions are less, the effect can be greater. In this case, carbon dioxide is expected to contribute approximately 93% of the greenhouse gas emissions, whereas methane will contribute approximately 7%.

Emissions from natural gas production at the Scarborough Field[157] are caused by gas flaring, methane leaks, platform energy requirements for compressors, power generation,

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[154] / Greenpeace, *Liquid Natural Gas: A roadblock to a clean energy future*, supra.
[155] / Heede, R, *supra.*
[156] / The report is based on existing data, and Mr. Heede's best estimates where data does not exist.
[157] / As noted by Heede, these estimates may vary if the gas is produced from different fields.

heating loads, lighting and hotel loads. Transportation of the gas by subsea pipeline to the proposed Pilagra LNG plant (for processing and liquefaction) will result in emissions caused by pipeline energy needs, plus fugitive methane from leaky seals, compressors, and other sources.

Gas liquefaction will result in greenhouse gas emissions from refrigeration compressors, other plant electricity demands, acid gas venting, flaring, methane venting, and minor amounts of nitrous oxide emissions.

Shipping LNG from Australia to California emits greenhouse gases as a result of converting propulsion fuel into carbon dioxide and methane.

Operation of the FSRU, or LNG terminal, results in emissions during the transfer of the LNG to the FSRU, fuel consumption for tenders and tug boats and crew boats, vaporization, and electricity to power the facilities. Methane emissions will occur from incomplete combustion of fuel. Construction activities will add to these emissions.

Finally, combustion of natural gas by consumers causes significant greenhouse gas emissions.

The total greenhouse gas emissions from the Cabrillo Port project would equal 4.3 to 4.9 percent of California's total greenhouse gas emissions, and 5.3 to 5.9 percent of California's CO2 emissions.[158] This figure is much higher than the estimate of "0.06 percent" in the Revised DEIR. (Revised DEIR at p. 4-20.) For a State that is allegedly seeking to reduce its GHG emissions, this project would force a step in the wrong direction.

Notably, the "LNG-related" emissions from this project amount to 19 – 26% of the total project emissions.[159] These extra emissions come from the liquefaction, transportation and regasification required to bring LNG to California. Even considering supply chain emissions for domestic gas production, the emissions will be much higher for LNG. These emissions are substantial and will result in a significant contribution to climate change impacts, which already threaten our health and environment in many ways.

The Greenhouse Gas Emissions from the Project will Result in Significant Climate Change Impacts

The existence and extent of climate change effects to the planet are no longer debatable. As Time Magazine headlines note, "Be Worried, Be Very Worried."[160] There exists a plethora of peer-reviewed and widely accepted scientific treatises on the subject, including works by the Intergovernmental Panel on Climate Change (IPCC), National

[158] / Heede, *supra*.
[159] / Id., Tables 2 and 3.
[160] / Time Magazine, *Special Report: Global Warming*, April 3, 2006.

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G207-164

G207-163 Continued

G207-164
Thank you for the information. See also the responses to the comments on pages 9 to 11 of this letter regarding "Natural Gas Need in California."

G207-164 Continued

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Continued

Academy of Sciences, the American Meteorological Society, the American Geophysical Union, and the American Association for the Advancement of Science.

As noted by the IPCC in its most recent assessment, there is overwhelming scientific consensus that not only is climate change occurring, but also that human activities are a significant contributing factor.[161] In fact, some scientists attribute the largest changes in climate to human-made greenhouse gases,[162] and several note that "most of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations."[163] According to Dr. James Hansen, "[t]he two most important greenhouse gases…are carbon dioxide and methane."[164] The increases in carbon dioxide and methane are attributable to the increased rate of fossil fuel (i.e., coal, oil, ***gas***) use. (Id.)

The concern about climate change has increased recently due to the realization that there is a "lag time" between the changes in the environment and the warming effect. Scientists now agree that "the climate system will continue to change for many decades (centuries for sea level) even in the absence of future changes in atmospheric composition."[165] Some warn that we may be approaching the "point of no return."[166] Others note that global temperatures can "change substantially in only a decade or two" and that we could be on the path to another rapid change in climate temperatures and resulting effects.[167] Accordingly, the pressure on modern society to cease contributing to climate change through greenhouse gas emissions is even greater than previously thought.

Climate change effects include: flooding; drought; heavier precipitation and storm events; more frequent heat waves; fires; heat stress; vegetation changes; sea level rise; rapid

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[161] / Karl, T.R. and Trenberth, K.E., *Modern Global Climate Change*, Science, vol. 32, December 5, 2003; Hasselmann, K., et al., *The Challenge of Long-Term Climate Change,* Science, vol. 302, December 12, 2003.

[162] / Hansen, J., *Defusing the Global Warming Time Bomb,* Scientific American, March 2004; Levin, K. and Pershing, J., *Climate Science 2005: Major New Discoveries* (World Resources Institute, March 2006), citing Barnett, T., et al., *Penetration of Human-Induced Warming into the World's Oceans,* Science, vol. 309, July 8, 2005.

[163] / McCarthy, J.J., *et al*, Eds., *Climate Change 2001: Impacts, Adaptation, and Vulnerability,* Cambridge Univ. Press, Cambridge, 2001 [not attached, but incorporated by reference]; see also Oreskes, N. *The Scientific Consensus on Climate Change,* Science, Vol. 36, December 3, 2004, and Karl, T.R., *supra.*

[164] / Hansen, J. *supra.*

[165] / Wigley, T.M.L., *The Climate Change Commitment*, Science, vol. 37, March 18, 2005; Meehl, G.A., et al, *How Much More Global Warming and Sea Level Rise?"* Science, vol. 307, March 18, 2005; Karl, T.R. *supra;* Hasselmann, K., *supra,* Levin, K., *supra.*

[166] / Alley, R.B., *Abrupt Climate Change*, Scientific American, November 2004.

[167] / Broecker, W.S., *Chaotic Climate: Global temperatures have been knows to change substantially in only a decade or two. Could another jump be in the offing?* Scientific American, November 1995.

G207-164 Continued

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snow and ice melt; increased intensity of hurricanes; and retreating glaciers. [168] According to Time Magazine, "[t]he amount of the earth's surface afflicted by drought has more than doubled since the 1970s." These changes will jeopardize the existence of many plant and animal species, causing some to go extinct and others to relocate due to changes in temperature, food and water supply, habitat and vegetation.[169] The Center for Biological Diversity recently petitioned the U.S. Fish and Wildlife Service (USFWS) to list the polar bear as a threatened species because of the threats to the bear caused by climate change.[170] The USFWS responded with a "positive" 90-day finding, publishing a Proposed Rule based on the finding that "the petition presents substantial scientific or commercial information indicating that the petitioned action of listing the polar bear may be warranted."[171] Time Magazine reported on the fact that as polar ice caps are melting "faster than ever" as a result of warmer waters, creating new and greater distances from floe to floe, bears are drowning.[172]

Ecosystem effects are already significant, and are expected to increase substantially, leading to destruction and modification of entire ecosystems.[173] Humans will also suffer

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[168] / Karl, T.R., *supra;* Levin, K., *supra*, citing Emanuel, K., *Increasing Destructiveness of Tropical Cyclones Over the Past 30 Years* (Nature, vol 436, August 4, 2005), P.J. Webster, et al., *Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment* (Science, vol. 309, September 16, 2005), NASA Earth Observatory, *Record Low for June Arctic Sea Ice* (June 2005 at earthobservatory.nasa.gov/Newsroom/NewImages/images.php3?img_id=16978), A.J. Cook et al., *Retreating Glacier Fronts on the Antarctic Peninsula Over the Past Half-Century* (Science, vol. 308, April 22, 2005), R.B. Alley et al., *Ice-Sheet and Sea-Level Changes* (Science, vol. 310, October 21, 2005), E.D. Domack, et al., *Stability of the Larsen B Ice Shelf on the Antarctic Peninsula During the Holocene Epoch* (Nature, vol. 436, August 4, 2005), F.S. Chapin III, et al., *Role of Land Surface Changes in Arctic Summer Warming* (Science, vol. 310, October 28, 2005), M. Hopkin, *Amazon Hit by Worst Drought for 40 Years: Warming Atlantic Linked to Both US Hurricanes and Rainforest Drought* (Nature, October 11, 2005), I.T. Stewart, et al., *Changes Toward Earlier Streamflow Timing Across Western North America* (Journal of Climate, vol. 18, April 2005).

[169] / Levin, K., *supra.*

[170] / See Petition to List the Polar Bear (*Ursus maritimus*) as a Threatened Species under the Endangered Species Act, www.biologicaldiversity.org; Executive Summary attached.

[171] / Federal Register, Vol. 71, No. 27, February 9, 2006.

[172] / Time Magazine, *supra.*

[173] / Levin, K., *supra*, citing McClean, C.J., et al., *African Plant Diversity and Climate Change* (Annals of the Missouri Botanical Garden, vol. 92, July 2005), Wilson, R., et al., *Changes to the Elevational Limits and Extent of Species Ranges Associated with Climate Change* (Ecology Letters, vol. 8, November 2005), Forcada, J., et al., *The Effects of Global Climate Variability in Pup Production of Antarctic Fur Seals* (Ecology, vol. 86, January 25, 2005), Perry, A.L., et al., *Climate Change and Distribution Shifts in Marine Fishes* (Science, vol. 308, June 24, 2005), Wing, S.L., et al., *Transient Floral Change and Rapid Global Warming at the Paleocene-Eocene Boundary* (Science, vol. 310, November 11, 2005), *Ocean Acidification Due to Increasing Atmospheric Carbon Dioxide* (The Royal Society, June 30, 2005), Orr, J.C., et al., *Anthropogenic Ocean Acidificaion Over the Twenty-First Century and Its Impact on Calcifying*

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broad effects due to changes in food and water availability, population displacement, interference with navigational routes, agricultural and economic losses, and even widespread famine.[174] In a new book entitled The Winds of Change, environmental journalist Eugene Linden notes the significant economic repercussions that global warming is already having on our society, both in terms of actual damages from intense storms and hurricanes, but also through rising insurance rates in coastal areas.[175]

In California alone, an increase in greenhouse gas emissions will result in the following global warming effects:[176]

- Loss in Sierra snow pack
- Increase in sea level rise
- More heat wave days in major urban centers
- Increase in heat-related deaths
- Increases in ozone formation (smog)
- More critically dry years
- Decrease in forest yields
- Increases in large wildfires
- Increased electricity demand

Even effective lowering of current emissions will result in a 3.0 – 5.4% increase in temperature and all of the afore-mentioned impacts. Less effective lowering of current emissions will result in a 5.5 – 10.4% increase in temperature and enormous impacts to the State. (Id.)

The debate at this point in time is not whether climate change is occurring, or even whether it will get worse, but whether humans can reverse the tide in time to save the environment and preserve our existence. Some scientists believe that "prudent actions can substantially reduce the likelihood and thus the risks of dangerous anthropogenic interference."[177] To avoid "major long-term climate change, average per capita

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Organisms (Nature, vol. 437, September 29, 2005), Schroter, D., et al., *Ecosystem Service Supply and Vulnerability to Global Change in Europe* (Science, vol. 310, November 25, 2005).

[174] / Id., citing Dore, M.H.I., *Climate Change and Changes in Global Precipitation Patterns: What Do We Know?* (Environment International, vol. 31, October 2005), Barnett, T.P. et al., *Potential Impacts of a Warming Climate on Water Availability in Snow-Dominated Regions* (Nature, vol. 438, November 17, 2005), Food and Agriculture Organization of the United Nations, *Impact of Climate Change, Pests and Diseases on Food Security and Poverty Reduction* (Special event background document for the 31st Session of the Committee on World Food Security, Rome, May 23-26, 2005); Alley, R.B., *supra.*

[175] / Newsweek, *Tides Turning: A new book predicts that climate change is likely to be abrupt and cataclysmic – and that these sudden shifts could cripple national economies,* March 25, 2006.

[176] / Union of Concerned Scientists, *Climate Change Campaign: California Global Warming Impacts and Solutions.* February 2006.

[177] / Mastrandrea, M.D. and Schneider, S.H., *Probabilistic Integrated Assessment of "Dangerous" Climate Change*, Science, vol. 304, April 23, 2004.

greenhouse gas emissions must be ***reduced to a small fraction of the present levels*** of developed countries…"[178] In particular, levels of carbon dioxide and methane emissions must be reduced.[179] According to Dr. Hansen, "[i]mproved energy efficiency and increased use of renewable energies" are necessary to reduce greenhouse emissions.[180]

Clearly, we are on a path which requires us to *reverse* the trend of climate change and to reduce greenhouse gas emissions substantially. Now is not the time to approve new projects that will cause increases of greenhouse gas emissions and contribute to a downward spiral towards irreversible climate change. Use of any fossil fuel will have an adverse effect on our ability to reverse current trends of global warming; as noted above, this project alone will result in a significant increase in greenhouse gas emissions.

The good news is that we can decrease our State's contribution to greenhouse gas emissions. Reducing natural gas demand in California by one-third, which can be accomplished through conservation, efficiency and renewable energy (see comments above), will reduce CO2 emissions by 101 billion pounds per year. This reduction is equal to removing more than 10 million passenger cars per year from the road and provides the same benefits as building three LNG terminals.[181]

4.6.2 Regulatory Setting

USEPA's permitting decision does not affect the impact analysis and requirement to mitigate impacts to the maximum extent feasible under CEQA

The CEQA impact analysis and requirement to mitigate impacts is not relieved by USEPA's preliminary Clean Air Act permitting decision. CEQA requires that the project's impacts, several of which are Class I, be mitigated to the maximum extent feasible. This means that offsets are required to mitigate onshore air quality impacts, regardless of USEPA's permitting decision. In fact, as documented in the Revised DEIR, it is even more important that the Revised DEIR require offsets in order to mitigate the significant NOx and ROC emissions that USEPA may allow to otherwise illegally contribute to the ozone problem onshore. As discussed briefly below, USEPA's decision to not require offsets in its preliminary permit decision of June 29, 2005 lacks any legal basis and serves only to protect BHP Billiton's financial interests in place of the public's health.

[178] / Hasselmann, K., *supra,* emphasis added; see also Levin, K., *supra* ("unless we cut emissions sharply, we will see considerable additional future effects"), citing Hansen J., et al., *Earth's Energy Imbalance: Confirmation and Implications*, Science, vol. 308, June 3, 2005.
[179] / Hansen, J., *supra;* see also Alley, R.B., *supra.*
[180] / Id., see also Levin, K., *supra,* citing studies regarding solar cells, solar technology, hydrogen creation, biodiesel and ethanol.
[181] / Greenpeace, *Liquid Natural Gas: A roadblock to a clean energy future*, 2004.

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The USEPA is responsible for determining the Federal, State, and local air quality laws and regulations that are applicable to deepwater ports, including Cabrillo Port. The USEPA has made a preliminary determination that the emission offsets requirements outlined in VCAPCD Rule 26.2 are not applicable to Cabrillo Port equipment and operations.

It should be noted that prior to the release of the March 2006 Revised Draft EIR, the staff of the VCAPCD did not object to the USEPA's permitting decision. As to the position of the California Air Resources Board in the same timeframe, see the response to Comment G207-160.

The Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures. Section 4.6.2 discusses the current regulatory position of the VCAPCD, which was detailed in a letter to the USEPA (Villegas 2006). Section 4.6.4 discusses applicable mitigation measures.

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Federal law designates the nearest onshore area of Ventura County as non-attainment for ozone.

Cabrillo Port will be located approximately 14 miles offshore of Ventura County in federal waters. Ventura County is located in the South Central Coast Air Basin.[182] The boundaries of Ventura County include two offshore Channel Islands: Anacapa Island and San Nicolas Island.[183] All of Ventura County, *including the islands*, is designated as non-attainment for ozone for not meeting California's air quality standards.[184] Although Ventura County is still designated non-attainment for ozone under national standards promulgated by USEPA, Anacapa and San Nicolas Islands are inexplicably designated as "unclassifiable/ attainment" for each pollutant.[185]

For purposes of regulating a deepwater port such as Cabrillo Port, Congress explicitly intended the State's designation of Ventura County's non-attainment status for ozone, which includes the Channel Islands, to control. Section 1518 (b) of the DPA:

> "prevents the Deepwater Port Act from relieving, exempting or immunizing any person from requirements imposed by State or local law or regulation. In addition, States are not precluded from imposing more stringent environmental or safety regulations."[186]

Cabrillo Port is not exempt from regulation as a New Source in a non-attainment area under VCAPCD Local Rules and regardless, these rules do not change California's ozone non-attainment designation for Ventura County, including Anacapa and San Nicolas Islands.

Contrary to USEPA's decision, VCAPCD Local New Source Review (NSR) Rule 26 does apply to Cabrillo Port because State and federal law require the port to be regulated as if it were located in the onshore non-attainment area of Ventura County. This was USEPA's position for almost two years when it was reviewing Cabrillo Port's significant air quality impacts and permit application.[187] USEPA wrote several thoroughly

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[182]/ 17 CCR § 60103.
[183]/ Cal. Gov. Code § 23156.
[184]/ 17 CCR §§ 60201 and 60205.
[185]/ 40 CFR 80.305; See also, Sears 2006 at 8-9. An area is only designated as "unclassifiable" when the data do not support a designation of attainment or non-attainment. As identified and analyzed in Ms. Sears' Report, the data collected on Anacapa Island before the air monitor was removed in 1992 reported several national and state air quality violations.
[186]/ Section 19 (b) of Senate Report 93-1217 (Oct. 2, 1974).
[187]/ McLeod, Barbara (Senior Special Assistant, EPA), *Letter to Letter to Steve Meheen (Project Manger, BHP Billiton LNG International Inc.)*. July 7, 2004. [SEE Attachments to Kraus 2006]. Hereafter "McLeod 2004"; Rios, Gerardo C. (Chief, Permits Office, Air Division, EPA), *Letter to Steve Meheen (Project Manager, BHP Billiton LNG International Inc.)*. April 5, 2004a. [SEE Attachments to Kraus 2006]; Rios, Gerardo C. (Chief, Permits Office, Air Division, EPA), *Letter to Commander Mark Prescott (Acting Chief, USCG)*. June 10, 2004b. [SEE Attachments to Kraus 2006]; Rios, Gerardo C. (Chief, Permits Office, Air Division, EPA), *Letter to Steve*

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researched legal briefs defending this position to the applicant and the White House.[188] In fact, in a letter addressed to the White House, USEPA concluded that its determination to apply the onshore non-attainment rules to Cabrillo Port "represents EPA nationwide policy on implementation of the DPA and the Clean Air Act ("CAA") with respect to offshore facilities."[189] Inexplicably, and after considerable lobbying from the applicant, USEPA changed its position without any reasonable legal explanation in June 2005.[190] USEPA's change in position makes no sense in light of the reality that all of the emissions from the Cabrillo Port project will be transported onshore as admitted in the Revised DEIR and documented by Ms. Sears.[191] (Revised DEIR at Table 4.6-20.)

Despite rejecting BHP Billiton's plethora of legal briefs on this issue, USEPA cited to a VCAPCD exemption from New Source Review for "any emissions unit located on San Nicolas Island or Anacapa Island."[192] This exemption is simply inapplicable to Cabrillo Port because it is not located on either of these islands as required by the plain language of the exemption.

USEPA originally rejected the applicability of this exemption on several relevant grounds: 1) the inappropriateness of permitting Cabrillo Port as if it were located within a National Park which encompasses Anacapa Island, or as if it were part of the Naval Base which encompasses San Nicolas Island; 2) the types of sources located on these Islands and the unlikelihood of any new major sources being located on the Islands; 3) the reasons why VCAPCD exempted sources on the Islands did not encompass Cabrillo Port; 4) the location of the Islands in comparison to the Port since Cabrillo Port is several miles closer to the onshore area than it is to either Island; and 5) the reasons behind Congress requiring offsets for OCS sources within 25 miles of an onshore non-attainment area. None of these facts have changed today to provide a basis for USCG to stray from USEPA's original determination that onshore non-attainment rules for ozone apply to Cabrillo Port.[193]

Despite USEPA's June 29, 2005 arbitrary change in position and political determination regarding the air permit, USCG and CSLC are not relieved of their obligation to regulate

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Meheen (Project Manager, BHP Billiton LNG International Inc.). June 29, 2004c. [SEE Attachments to Kraus 2006]. Hereafter "Rios 2004c".

188/ Id.

189/ McLeod 2004.

190/ Zimpfer, Amy K. (Associate Director, Air Division, EPA), *Letter to Commander Mark Prescott (Chief, USCG)*. June 29, 2005. [SEE Attachments to Kraus 2006]; Kirby, Steven Evans (Hollister & Brace), *Letter to Gerardo C. Rios (Chief, Permits Office, Air Division, EPA)*. June 1, 2004. [SEE Attachments to Kraus 2006]; Meheen, Steven R. (Project Manager, BHP Billiton), *Email to Bob Middleton & Jeff Cohen (White House Task Force on Energy Project Streamlining)*. May 24, 2004. [SEE Attachments to Kraus 2006]; *Umenhofer, Tom (Entrix), E-Mail Memorandum to Mike Villegas (Air Pollution Control Officer, VCAPCD)*. June 21, 2004. [SEE Attachments to Kraus 2006].

191/ Sears at 3-8.

192/ VACPCD Rule 26.3 (New Source Review – Exemptions); Rios 2004c.

193/ McLeod 2004

Cabrillo Port in a manner consistent with both the CAA and the DPA. These statutes require that Cabrillo Port's emissions from operations and construction in federal waters be regarded as occurring in a non-attainment area for ozone precursors and offset, as designated by both federal and state law. 40 CFR 81.305 and 17 CCR §§ 60201 and 60205. The Revised DEIR cannot exculpate the applicant from offsetting the project emissions on the basis of USEPA's permitting decision.

4.6.3 Significance Criteria

Although the Revised DEIR generally identifies the relevant significance criteria for air quality impacts, it fails to consistently apply these criteria in the impact analysis and mitigation section of the document. Specific discrepancies are discussed below in relation to the specific impacts. However, one particularly glaring omission is the failure to apply the relevant CEQA Thresholds of Significance to evaluate the impacts of ozone precursor emissions that are generated offshore.[194] (Revised DEIR at pp. 4.6-33 – 4.6-35.) No explanation is provided for this lapse.

As Ms. Sears notes, [d]istance alone does not mitigate Ventura and Los Angeles County ozone impacts caused by the project offshore NOx emissions,"[195] and "although the Project emissions are being released offshore . . . this does not counter the likelihood for causing significant onshore ozone impacts."[196] Moreover, for a source with greater NOx emissions (relative to ROC emissions), as is the case with the FSRU and project vessels, "the highest ozone contribution often occurs at greater downwind distances, compared to culpable ozone levels in the near-field areas."[197] It is thus clear as a factual matter that emissions initially generated offshore will blow onshore and contribute to the ozone nonattainment problem in both Ventura County and Los Angeles County.

Moreover, as a legal matter, this project would be licensed pursuant to the DPA, under which, "the law of the nearest adjacent coastal State . . . is declared to be the law of the United States and shall apply to any deepwater port licensed pursuant to this chapter . . ." DPA §1518 (a). "Nearest adjacent coastal state" is defined as the State located within 15 miles of the port and whose boundaries if extended seaward beyond three miles would encompass the port. DPA § 1502 (B); 1518(b). Thus, the requirements that would apply to this project if it were operating in onshore areas (e.g., CEQA Thresholds of Significance) cannot be ignored simply because the emissions are initially generated offshore.

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[194]/ The single reference to the CEQA Thresholds of Significance in this discussion is a quote attributed to CARB regarding impacts to the SCAQMD. (Revised DEIR at p. 4.6-34.) However, the Revised DEIR's "tentative" conclusion that these emissions result in a Class I impact is not based on the fact that these emissions far exceed the CEQA threshold of Significance. (Revised DEIR at p. 4.6-35.)

[195]/ Sears 2006 at 8.

[196]/ Id. at 7.

[197]/ Id. at 7-8.

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The first significance criterion in Section 4.6.3 relies on the significance thresholds established by the VCAPCD and the South Coast Air Quality Management District, as summarized in Table 4.6-16.

Section 4.1.8 contains a detailed description of the marine climatic setting for the proposed Project. Section 4.6.1.2 has been revised to provide an expanded discussion of the potential transport of offshore air pollutant emissions to onshore areas due to meteorological conditions.

G207-167
Ventura County Air Quality Assessment Guidelines do not apply to equipment or operations required to have Ventura County Air Pollution Control District permits (e.g., Authority to Construct or Permit to Operate). Since the USEPA has proposed to issue an Authority to Construct under VCAPCD Rule 10, these guidelines do not apply to Cabrillo Port. Section 4.6.2 contains a revised discussion of the air quality regulatory setting for the proposed Project.

Thus, the Revised DEIR must apply the CEQA thresholds of significance to evaluate the impacts from all offshore emissions. For Ventura County the significance threshold for NOx emissions is 25 pounds per day (Revised DEIR at p. 4.6-25); for Los Angeles County it is 55 pounds per day.[198]

The CEQA Thresholds of Significance also inform the identification of mitigation measures. The premise and purpose of these thresholds is to, among other things, identify emissions that will jeopardize attainment of federal air quality standards.[199] The VCAPCD and the SCAQMD have already identified the emissions mitigation – or "offset" – that is necessary to attain federal air quality standards. In Ventura, ozone precursor emissions must be offset by a ratio of 1.3:1.[200] In the South Coast, such emissions must be offset at a ratio of 1.0:1 to 1.2:1.[201] These are the mitigation levels that must be employed to conclude that project emissions are less than significant.

In addition, the Revised DEIR impact analysis generally neglects to evaluate project emissions in light of whether the project would "conflict with or obstruct implementation of the applicable air quality plan." (Revised DEIR at p. 4.6-25.) Both the VCAPCD and the SCAQMD have air quality management plans that have been prepared so these areas can achieve state and federal air quality standards. These plans include, among other things, a demonstration that the areas will make reasonable further progress towards achieving federal air quality standards. This demonstration is based on projections of future emissions. If a project's emissions are not already included in the air quality management plan, the project will obstruct the area's ability to make reasonable further progress in attaining air quality standards, and will thus trigger this significance criteria. The Cabrillo Port project is not included in the VCAPCD or the SCAQMD air quality management plans. As discussed in more detail below, the Cabrillo Port project will obstruct implementation of both of these plans by interfering with both areas' ability to achieve state and federal air quality standards, particularly ozone standards.[202]

Furthermore, under California law, an upwind air district's air quality management plan must also account for the attainment and maintenance of state and federal air quality standards.[203] Ventura APCD has incorporated standards into its air quality management plan to satisfy this obligation.[204] Inconsistencies with Ventura's air quality management

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198/ SCAQMD, *Air Quality Significance Thresholds*. January 2006. Table 4.6-16 of the Revised DEIR fails to identify the Los Angeles County CEQA significance thresholds for project *operation*. (Revised DEIR at p. 4.6-25.)

199/ VCAPCD, *Ventura County Air Quality Assessment Guidelines*. October 2003. (see p. 3-2.) See also, Revised DEIR at 4.6-25 ("impacts on air quality are considered significant if the Project . . . [c]onflicts with or obstructs implementation of an applicable Federal, State, or local air quality plan.").

200/ VCAPCD Rule 26.2.

201/ SCAQMD New Source Review Regulation XIII.

202/ See also, Kraus 2006.

203/ California Health and Safety Code § 40912.

204/ See, e.g., *Ventura County Air Quality Management Plan*. 1994 (p. 2-12).

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Section 4.6.4 contains a comparison of Project offshore emissions that occur in Ventura County waters to significance criteria outlined in Ventura County Air Quality Assessment Guidelines. No offshore emissions would occur in Los Angeles County waters as a result of the Project. Since the USEPA has proposed to issue an Authority to Construct under Ventura County Air Pollution Control District (VCAPCD) Rule 10, Ventura County significance criteria are not applicable to Cabrillo Port equipment or operations. Emissions from Project vessels (i.e., LNG carriers, tugs, service vessels) operating in Federal waters are not subject to regulation under the Deepwater Port Act, and therefore, the significance criteria or emissions offsets established for Ventura County or Los Angeles County are not applicable.

G207-169

G207-169
Impact AIR-4 has been revised to provide specific information regarding the Applicant's emissions reduction programs and their review by the USEPA and the California Air Resources Board (CARB). As part of air permit-to-construct application procedures, the Applicant has committed to the USEPA to achieve emissions reductions (in addition to reductions inherent to the Project) to an amount equal to the FSRU's annual NOx emissions. The Applicant has executed contracts to retrofit two marine vessels (long haul tugs) by replacing the propulsion engines of each vessel with modern low emitting engines (Tier 2 compliant diesel-fired engines). At the request of the USEPA and the CARB, the Applicant conducted source testing to assist in determining the emission reductions expected as a result of the retrofits. Both the USEPA and the CARB have reviewed the results, but there is not yet a consensus on the estimated emission reductions from the mitigation proposal. However, based on the USEPA's and CARB's estimates, the proposed Emissions Reduction Program (AM AIR-4a) would provide for NOx emission reductions greater than the estimated annual NOx emissions from FSRU equipment and estimated NOx emissions from operation of LNG carrier offloading equipment. Appendix G9 contains a memorandum from the CARB to the CSLC on this topic.

plan, therefore, could also impact air quality in the South Coast Air Basin and interfere with that area's ability to achieve federal and state air quality standards for ozone.

4.6.4 Impact Analysis and Mitigation

Impact AIR-1: Net Emission Increases of Criteria Pollutants from Construction Activities in Designated Nonattainment Areas

Construction emissions in both Ventura County and Los Angeles County significantly exceed the CEQA Significance and Mitigation Thresholds (25 pounds per day for Ventura, 100 pounds per day for Ventura). (Revised DEIR Table 4.6-17.) Although the Revised DEIR does correctly identify these impacts as Class I, these emissions are likely underestimated as described in Ms. Sears' report.[205] However, the biggest flaw in the impact analysis is that it fails to propose offsets for NOx and ROC emissions as a mitigation measure. Under CEQA and the DPA, each impact must be mitigated to the maximum extent feasible. Yet, the Revised DEIR only reports that construction emissions in LA County will be partially offset due to the USCG's General Conformity obligations and fails to even mention or analyze the feasibility of offsetting the emissions in Ventura County. Instead, the Revised DEIR proposes a Construction Emissions Plan that fails to contemplate offsets at all.

To ensure that construction emissions do not exceed the estimates in the Revised DEIR, mitigation must be adopted that would limit total construction emissions to the amounts identified in Table 4.6-11.[206] In addition, emission offsets must be required to ensure that the project is consistent with local air quality plans, and that it does not interfere with Ventura County and Los Angeles County's ability to achieve federal and state air quality standards for ozone.[207] In Ventura County emission offsets are required at a ratio of 1.3:1; in Los Angeles County offsets are required at a ratio of 1.0:1 to 1.2:1.

Impact AIR-4: Emissions of Ozone Precursors from the FSRU

The impact from FSRU emissions of ozone precursors from the FSRU is inaccurately characterized as a Class II impact.

First, as discussed above regarding Section 4.6.1.3 of the Revised DEIR, the FSRU emissions are underestimated because the Revised DEIR relies on faulty emissions calculations for the FSRU. The full extent of FSRU emissions must be identified and evaluated to properly determine the level of impact and the necessary mitigation.

Second, the Revised DEIR improperly concludes that AM AIR-4a would reduce this impact to a level of insignificance. The effectiveness of this mitigation is completely unsubstantiated in the Revised DEIR, which merely states that the applicant, as part of its

[205]/ Sears 2006 at p. 11-12.
[206]/ Id. at 12.
[207]/ Id. at 19-22

G207-169 Continued

G207-169 Continued

G207-170

G207-170
The significance criteria outlined in Ventura County Air Pollution Control District (VCAPCD) and South Coast Air Quality Management District (SCAQMD) CEQA assessment guidelines are used to establish the construction emission levels at which mitigation measures should be considered and/or an EIR/EIS should be prepared. These assessment guidelines do not stipulate that construction emissions need to be reduced to these levels or require emission offsets. Instead, the guidelines restate the CEQA requirement that all feasible mitigation measures must be applied to projects determined to have a significant impact as defined in the EIR/EIS.

Section 4.6.1.3 contains a revised summary of construction emissions. Section 4.6.4 contains a revised discussion of applicable mitigation measures.

G207-171
We respectfully disagree that the emissions are underestimated and believe the emissions calculations are correct. Regardless, the emission estimates will be incorporated as permit limits in EPA's air permit, and emissions of NO_X will be monitored. However, the Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures.

G207-171

G207-172
The context of AM AIR-4a (see definition of AMs in Section 4.1.5) is discussed under the Impact AIR-4, Emissions of Ozone Precursors from the FSRU. In brief, the USEPA concluded that emission offsets would not be required for Project sources (Zimpfer 2005a) and the FSRU would not trigger PSD because potential emissions are less than PSD major source thresholds. See also the response to the comment on the bottom of page 63 of this letter. Within the above described regulatory context, no mitigation is required.

G207-172

Impact AIR-4 and Impact AIR-5 in Section 4.6.4 have been revised to provide specific information regarding the Applicant's emissions reduction programs and their review by the USEPA and the California Air Resources Board (CARB). As part of air permit-to-construct application procedures, the Applicant has committed to the USEPA to achieve emissions reductions (in addition to reductions inherent to the Project) to an amount equal to

the FSRU's annual NOx emissions. The Applicant has executed contracts to retrofit two marine vessels (long haul tugs) by replacing the propulsion engines of each vessel with modern low emitting engines (Tier 2 compliant diesel-fired engines). At the request of the USEPA and the CARB, the Applicant conducted source testing to assist in determining the emission reductions expected as a result of the retrofits. Both the USEPA and the CARB have reviewed the results, but there is not yet a consensus on the estimated emission reductions from the mitigation proposal.

Based on the USEPA's and CARB's estimates, the proposed Emissions Reduction Program (AM AIR-4a) would provide for NOx emission reductions greater than the estimated annual NOx emissions from FSRU equipment and estimated NOx emissions from operation of LNG carrier offloading equipment. However, the total emission reductions would be less than the annual NOx emissions estimated for all operations (FSRU and Project vessels) in California Coastal Waters, as defined by the CARB. According to CARB, the emission reduction proposal "represents more than what would otherwise be required by the current determination of applicable regulations."

Appendix G9 contains a memorandum from the CARB to the CSLC on this topic. Electronic copies of the Applicant's reports submitted to the USEPA that detail the tug retrofits and related emission reductions are available at www.epa.gov/region09/liq-natl-gas/cabrillo-air.html.

permit application procedures, "has committed to *identify* a suitable emission reduction program . . ." (Revised DEIR at 4.6-33, emphasis added.) There is no evidence in the Revised DEIR to support the conclusion that an *unidentified* NOx emission program would reduce any of the FSRU emissions that will blow onshore to areas in nonattainment for federal and state ozone standards. AM AIR-4a is a deferred mitigation measure of unknown efficacy that fails to even identify performance standards as required by CEQA.[208]

Third, USEPA's preliminary conclusion that it will not require offsets as part of its CAA permitting decision does not satisfy CSLC's obligation under CEQA to ensure that significant air quality impacts must be mitigated to the maximum extent feasible. FSRU emissions will blow onshore and interfere with Ventura and Los Angeles Counties' ability to attain federal and state air quality standards for ozone. (Revised DEIR at p. 4.6-33).[209] FSRU emissions also exceed CEQA significance thresholds for Ventura County and Los Angeles County. (Revised DEIR at p. 4.6-25.)[210] These impacts must be mitigated and an, as yet, unwritten program to reduce emissions in no way satisfies CEQA mitigation requirements.

Finally, the Revised DEIR arbitrarily breaks apart the impact analysis for FSRU emissions from the impact analysis for project vessel emissions.[211] The Revised DEIR reports that normal project operations would generate emissions from "stationary sources on the FSRU and from marine vessels, i.e., LNG carriers, support tugs, and a crew boat," (Revised DEIR at 4.6-12 - 4.6-13.), and "there is no air quality basis for separating the FSRU from the marine vessel emissions – these are all part of the same pool of Project emissions that will significantly affect onshore air quality."[212] No explanation is provided in the Revised DEIR as to why offshore ozone precursor emissions are analyzed separately. However, the result of this approach is clear – to downplay the project's significant, unmitigated impacts to onshore air quality. It is the role of the Revised DEIR to accurately disclose information to the public through the CEQA process, not to mislead the public by arbitrarily splitting and downplaying the ozone impacts to onshore air quality. The Revised DEIR must consider the total ozone precursor emissions generated during offshore operation activities to accurately identify the significance of the impact and the necessary level of mitigation.[213]

Appendix G-2 reports that NOx emissions from the FSRU and vessels total 1,268 pounds per day. These emissions clearly exceed the applicable CEQA significance thresholds by several orders of magnitude and warrant a finding of a significant impact to air quality, which has not been mitigated.

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[208]/ CEQA Guidelines §15126.4.
[209]/ See also Sears 2006 at 3-8 and 19-23.
[210]/ SCAQMD 2006.
[211]/ Sears 2006 at 22-23.
[212]/ Sears 2006 at 22.
[213]/ Id.

G207-172 Continued

G207-172 Continued

G207-173

G207-174

G207-175

G207-172 Continued

G207-173
Section 4.6.4 has been revised to include a discussion of the emission reduction projects proposed by the Applicant. This section also contains information on additional Applicant measures to reduce emissions and required mitigation measures.

The lead Federal and State agencies share the responsibility to ensure that mitigation measures are implemented. Table 6.1-1 in Chapter 6 is the basis for the Mitigation Monitoring Program, which would be implemented, consistent with section 15097(a) of the State CEQA Guidelines, to ensure that each mitigation measure is incorporated into Project design, construction, operation, and maintenance activities.

FSRU emissions are not subject to the significance thresholds outlined by the VCAPCD and the SCAQMD.

G207-174
The Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures. Section 4.6.4 contains revised information on Project impacts and mitigation measures. These revisions address the concurrent emission of ozone precursors from the FSRU and Project vessels.

G207-175
See response to Comment G207-170. Emissions in Federal waters are not subject to the significance thresholds outlined by the VCAPCD and the SCAQMD.

To mitigate these emissions, offsets must be required to ensure that the project is consistent with local air quality plans, and that it does not interfere with Ventura County and Los Angeles County's ability to achieve federal and state air quality standards for ozone.[214] In Ventura County, emission offsets are required at a ratio of 1.3:1; in Los Angeles County offsets are required at a ratio of 1.0:1 to 1.2:1.

Impact AIR-5: Emissions of Ozone Precursors from Project Vessels Operating in California Coastal Waters

Although the Revised DEIR correctly concludes that emissions from project vessels create a Class I impact, there are several significant flaws in this impact analysis which must be corrected for the Final EIR.

First, as discussed above regarding Section 4.6.1.3 of the Revised DEIR, vessel emissions are significantly underestimated because the Revised DEIR relies on faulty emissions calculations and unreasonable assumptions regarding the heating value of LNG carrier fuel, and because it omits emissions from LNG carrier generator or auxiliary boiler emissions and all vessel emissions beyond 25 NM (but still within California Coastal Waters). The full extent of vessel emissions must be identified and evaluated to accurately determine the level of impact and the necessary mitigation.

Second, the Revised DEIR arbitrarily attempts to distinguish vessel emissions initially generated in County waters from vessel emissions that would initially be generated outside such areas. (Revised DEIR at p. 4.6-34.) This approach is utterly inconsistent with the substantial evidence that "offshore emissions in the Project area are part of the onshore ozone nonattainment problem."[215] There is no reasonable basis to limit the impact analysis to vessel emissions initially generated in State waters, which are a mere fraction of the total offshore emissions associated with this project (although, even under this approach, vessel emissions exceed the applicable CEQA significance thresholds).

Third, there is also no reasonable basis for the Revised DEIR to limit the impact analysis to "federal waters" or to "24 NM of the California mainland coastline." (Revised DEIR at p. 4.6-34.) As discussed in detail regarding Section 4.6.1.3 of the Revised DEIR, emissions generated within up to 90 miles of the project area "are likely to be transported ashore and affect the air quality in California's coastal air basins, particularly during the summer."[216] Even conservatively assuming that LNG carriers will utilize natural gas

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214/ Id. at 19-23.
215/ Sears 2006 at 3-4
216/ Sears 2006 at 8. See also, Sears 2006 at 3-8 and 19-24. Notably, CARB's definition of "California Coastal Waters" is based on "over 500,000 island, shipboard, and coastal meteorological observations. These data were taken from official records of a number of agencies including the U.S. Weather Bureau, Coast Guard, Navy, Air Force, Marine Corps, Civil Aeronautics Administration and Army Air Force." CARB 1984 at 80. This definition is supported by scientific data and observations. It is not merely a "policy" statement as suggested in the Revised DEIR. (Revised DEIR at p. 4.6-35).

G207-176

G207-177

G207-178

G207-179

G207-176
Ventura County Air Pollution Control District (VCAPCD) Rule 26.2 and South Coast Air Quality Management District (SCAQMD) New Source Review Regulation XIII are applicable only to stationary source emissions. Further, the USEPA has made a preliminary determination that the emission offsets requirements outlined in VCAPCD Rule 26.2 are not applicable to Cabrillo Port equipment and operations.

It should be noted that prior to the release of the March 2006 Revised Draft EIR, the staff of the VCAPCD did not object to the USEPA's permitting decision. As to the position of the California Air Resources Board in the same timeframe, see also the response to the comment on page 54 of this letter.

The Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures. Section 4.6.4 discusses the health effects attributed to air pollutants and includes revised impacts and mitigation measures.

G207-177
See response to Comments G207-172 and G207-160, respectively.

G207-178
The comment misinterprets the intent of the cited analysis. For information purposes, the text properly segregates emissions with respect to their generation in Ventura County, State, and Federal Waters, respectively. The Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures.

The Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures. Section 4.6.4 contains revised information on Project impacts and mitigation measures. These revisions address the concurrent emission of ozone precursors from the FSRU and Project vessels.

G207-179
The area of California Coastal Waters in which emissions would be mitigated was determined in conjunction with the California Air Resources Board (Simeroth 2005) as discussed in Impact AIR-5 in Section 4.6 of the March 2006 Revised Draft EIR.

However, as previously stated, the Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. LNG carriers associated with the Project would operate on natural gas (boil-off gas from the LNG cargo) with 1 percent diesel pilot during all operations in California Coastal Waters. Section 4.6.1.3 contains information on emissions from LNG carriers operating in California Coastal Waters as defined by the California Air Resources Board.

Section 4.6.1.3 contains additional information on emissions due to LNG carrier operations in all California Coastal Waters.

Emissions outside of district waters are not subject to the significance criteria outlined by VCAPCD and SCAQMD.

beyond the 25 NM mark, including the full scope of LNG carrier emissions that would occur within California Coastal Waters almost triples the Revised DEIR estimate of NOx emissions. The use of diesel fuel increases the emissions estimate by a factor of 7.[217] Excluding these emissions from the impact analysis thus significantly underestimates the potential onshore NOx impacts from project vessels. NOx emissions from project vessels dramatically exceed the applicable CEQA significance thresholds for Ventura County and Los Angeles County, and they will conflict with and obstruct VCAPCD's and SCAQMD's implementation of their air quality management plans. Mitigating emissions that occur only within County or federal waters would mean that these significant impacts would go unmitigated.

Fourth, AM AIR 5-a purports to give the applicant mitigation credit for using natural gas on project vessels. (Revised DEIR at 4.6-33.) However, this is part of the project description and the operation emissions reported in Appendix G2 are calculated on the basis of this fact. This is not mitigating the significant air quality impact from the 1,268 pounds per day of NOx because it was calculated on the assumption that the vessels were running on natural gas. The appropriate and effective mitigation that is legally required is for the applicant to offset the NOx emissions.

Fifth, CSLC cannot rely on MM AIR-5c ("Consultation with CARB to Identify Emission Reduction Opportunities") to conclude that impacts from marine vessels can be mitigated to a level of insignificance. (Revised DEIR at 4.6-35). The effectiveness of this mitigation is completely speculative and unsubstantiated. There is no evidence provided in the Revised DEIR to support a conclusion that an *unidentified* ozone precursor emission program would reduce any of the vessel emission impacts. Indeed, the Revised DEIR itself admits that "the issue of emission reductions to mitigate emissions from project vessels in Federal waters/California Coastal Waters is not yet resolved between the applicant and CARB." (Revised DEIR at p. 4.6-35.) MM AIR-5c is a deferred mitigation measure of unknown efficacy that fails to even identify performance standards as required by CEQA.[218] CSLC is not relying on it to reduce Impact AIR-5 to a Class II impact, and it cannot do so for the final EIR.[219]

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[217]/ Sears 2006 at 16-17. Ms. Sears' calculations disprove CARB's suggestion (which is not supported by any documentation) that the majority of Project emissions occur within 24 NM of the California Coast. (Revised DEIR at p. 4.6-34.)

[218]/ CEQA Guidelines §15126.4.

[219] / Just hours before the Malibu public hearing, BHP announced a new "emissions reduction program" in a press release. No supporting documentation for the claimed reductions was included, so there is no way to evaluate the accuracy or adequacy of the reductions in mitigating project impacts. It appears that at least a portion of the claimed reductions have already been incorporated into the Revised DEIR's emissions estimates (e.g., use of natural gas for project vessels). However, to the extent the announced emission reduction credits actually go beyond what is already identified in the Revised DEIR, this is significant new information that warrants recirculation of the EIR.

G207-179 Continued

G207-179 Continued

G207-180

G207-181

G207-180
The context of AM AIR-4a (see definition of AMs in Section 4.1.5) is discussed under the Impact AIR-4, Emissions of Ozone Precursors from the FSRU. In brief the USEPA concluded that omission offsets would not be required for Project sources (Zimpfer 2005a) and the FSRU would not trigger PSD because potential emissions are less than PSD major source thresholds. See also the response to the comment at the bottom of page 68 and the top of page 69 of this letter. Within the above described regulatory context, no mitigation is required.

Impact AIR-4 and Impact AIR-5 in Section 4.6.4 have been revised to provide specific information regarding the Applicant's emissions reduction programs and their review by the USEPA and the California Air Resources Board (CARB). As part of air permit-to-construct application procedures, the Applicant has committed to the USEPA to achieve emissions reductions (in addition to reductions inherent to the Project) to an amount equal to the FSRU's annual NO_X emissions. The Applicant has executed contracts to retrofit two marine vessels (long haul tugs) by replacing the propulsion engines of each vessel with modern low emitting engines (Tier 2 compliant diesel-fired engines). At the request of the USEPA and the CARB, the Applicant conducted source testing to assist in determining the emission reductions expected as a result of the retrofits. Both the USEPA and the CARB have reviewed the results, but there is not yet a consensus on the estimated emission reductions from the mitigation proposal.

Based on the USEPA's and CARB's estimates, the proposed Emissions Reduction Program (AM AIR-4a) would provide for NO_X emission reductions greater than the estimated annual NO_X emissions from FSRU equipment and estimated NO_X emissions from operation of LNG carrier offloading equipment. However, the total emission reductions would be less than the annual NO_X emissions estimated for all operations (FSRU and Project vessels) in California Coastal Waters, as defined by the CARB. According to CARB, the emission reduction proposal "represents more than what would otherwise be required by the current determination of applicable regulations."

Appendix G9 contains a memorandum from the CARB to the CSLC on this topic. Electronic copies of the Applicant's reports submitted to the USEPA that detail the tug retrofits and related emission reductions are available at

www.epa.gov/region09/liq-natl-gas/cabrillo-air.html.

Measures that the Applicant has incorporated into the Project to reduce impacts that go beyond regulatory requirements are termed Applicant measures and are denoted AM (e.g., AM AIR 5-a; see Section 4.1.5). Section 4.6.4 includes a revised description of AMs and Agency proposed mitigation measures (MMs) related to Project emissions.

G207-181
The Revised Draft EIR, with reference to MM AIR-5c, concludes that under the circumstances at that time, "the status of this impact from the Project, as presently proposed, cannot be determined at this time," (Simeroth 2005). The potential impact was accordingly deemed Class I.

Impact AIR-4 and Impact AIR-5 in Section 4.6.4 have been revised to provide specific information regarding the Applicant's emissions reduction programs and their review by the USEPA and the California Air Resources Board (CARB). As part of air permit-to-construct application procedures, the Applicant has committed to the USEPA to achieve emissions reductions (in addition to reductions inherent to the Project) to an amount equal to the FSRU's annual NO_X emissions. The Applicant has executed contracts to retrofit two marine vessels (long haul tugs) by replacing the propulsion engines of each vessel with modern low emitting engines (Tier 2 compliant diesel-fired engines). At the request of the USEPA and the CARB, the Applicant conducted source testing to assist in determining the emission reductions expected as a result of the retrofits. Both the USEPA and the CARB have reviewed the results, but there is not yet a consensus on the estimated emission reductions from the mitigation proposal.

Based on the USEPA's and CARB's estimates, the proposed Emissions Reduction Program (AM AIR-4a) would provide for NO_X emission reductions greater than the estimated annual NO_X emissions from FSRU equipment and estimated NO_X emissions from operation of LNG carrier offloading equipment. However, the total emission reductions would be less than the annual NO_X emissions estimated for all operations (FSRU and Project vessels) in California Coastal Waters, as defined by the CARB. According to CARB, the emission reduction proposal "represents more than what would otherwise be required by the current determination of applicable regulations."

Appendix G9 contains a memorandum from the CARB to the CSLC on this topic. Electronic copies of the Applicant's reports submitted

to the USEPA that detail the tug retrofits and related emission reductions are available at www.epa.gov/region09/liq-natl-gas/cabrillo-air.html.

Finally, as discussed previously regarding Impact AIR-4, the Revised DEIR arbitrarily breaks apart the impact analysis for FSRU emissions from the impact analysis for project vessel emissions.[220] The Revised DEIR must consider the total ozone precursor emissions generated during offshore operation activities to accurately identify the significance of the impact and the necessary level of mitigation.[221] Appendix G-2 reports that NOx emissions from the FSRU and vessels total 1,268 pounds per day. These emissions clearly exceed the applicable CEQA significance thresholds by several orders of magnitude, and they will conflict with and obstruct VCAPCD's and SCAPCD's implementation of their air quality management plans. Total offshore operational emissions clearly warrant a finding of a significant impact to air quality, which has not been mitigated.

To mitigate these emissions, offsets must be required to ensure that the project is consistent with local air quality plans, and that it does not interfere with Ventura County and Los Angeles County's ability to achieve federal and state air quality standards for ozone.[222] In Ventura County, emission offsets are required at a ratio of 1.3:1; in Los Angeles County offsets are required at a ratio of 1.0:1 to 1.2:1.

AIR-6 Construction Emissions in Federal Waters

The Revised DEIR incorrectly concludes that offshore construction emissions are an insignificant Class III impact and require no mitigation.[223] This conclusion is unsubstantiated by any information provided in the Revised DEIR. Notably, the Revised DEIR fails to apply any thresholds of significance in assessing this impact. Instead, it applies a unique method of analyzing, or rather, downplaying the impact by comparing it to the total emission forecasts both air basins. As Ms. Sears reveals, this type of misleading and inappropriate impact assessment runs counter to the plethora of data that show these NOx emissions will blow onshore to Ventura and LA County non-attainment areas for ozone, contributing to its already degraded air quality.[224]

In addition, the Revised DEIR indicates that offshore construction activities would not occur during May through October, "which is the period of historical high ozone concentrations for the region." (Revised DEIR at p. 4.6-36.) The implication is that air quality impacts might be less severe if construction occurs outside this time period. This timing, however, would not mitigate air quality impacts because there is "no evidence that conditions conducive to high ozone formation will not occur from November through April."[225] Moreover, the Revised DEIR is disingenuous and self-contradictory on this point. For purposes of downplaying air quality impacts, the document states that such construction *would not occur* during May through October. But, for purposes of

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220/ Sears 2006 at 22-23.
221/ Id.
222/ Id. at 19-20.
223/ Id. at 23.
224/ Id. at 23-24.
225/ Sears 2006 at 24.

2006/G207

G207-182

G207-183

G207-184

G207-185

G207-182
See the responses to the comments at the bottom of page 68, the top of page 69, and bottom of page 63, respectively.

Impact AIR-4 and Impact AIR-5 in Section 4.6.4 have been revised to provide specific information regarding the Applicant's emissions reduction programs and their review by the USEPA and the California Air Resources Board (CARB). As part of air permit-to-construct application procedures, the Applicant has committed to the USEPA to achieve emissions reductions (in addition to reductions inherent to the Project) to an amount equal to the FSRU's annual NO_X emissions. The Applicant has executed contracts to retrofit two marine vessels (long haul tugs) by replacing the propulsion engines of each vessel with modern low emitting engines (Tier 2 compliant diesel-fired engines). At the request of the USEPA and the CARB, the Applicant conducted source testing to assist in determining the emission reductions expected as a result of the retrofits. Both the USEPA and the CARB have reviewed the results, but there is not yet a consensus on the estimated emission reductions from the mitigation proposal.

Based on the USEPA's and CARB's estimates, the proposed Emissions Reduction Program (AM AIR-4a) would provide for NO_X emission reductions greater than the estimated annual NO_X emissions from FSRU equipment and estimated NO_X emissions from operation of LNG carrier offloading equipment. However, the total emission reductions would be less than the annual NO_X emissions estimated for all operations (FSRU and Project vessels) in California Coastal Waters, as defined by the CARB. According to CARB, the emission reduction proposal "represents more than what would otherwise be required by the current determination of applicable regulations."

Appendix G9 contains a memorandum from the CARB to the CSLC on this topic. Electronic copies of the Applicant's reports submitted to the USEPA that detail the tug retrofits and related emission reductions are available at www.epa.gov/region09/liq-natl-gas/cabrillo-air.html.

It should be noted that prior to the release of the March 2006 Revised Draft EIR, the staff of the Ventura County Air Pollution Control District (VCAPCD) did not object to the USEPA's permitting decision. As to the position of the California Air Resources Board in the same timeframe, see the response to the comment on page 54 of this letter.

The Project has been modified since issuance of the March 2006

Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures. Section 4.6.4 discusses the health effects attributed to air pollutants and includes revised impacts and mitigation measures.

G207-183
Ventura County Air Pollution Control District (VCAPCD) Rule 26.2 and South Coast Air Quality Management District (SCAQMD) New Source Review Regulation XIII are applicable only to stationary source emissions. Further, the USEPA has made a preliminary determination that the emission offsets requirements outlined in VCAPCD Rule 26.2 are not applicable to Cabrillo Port equipment and operations.

It should be noted that prior to the release of the March 2006 Revised Draft EIR, the staff of the Ventura County Air Pollution Control District (VCAPCD) did not object to the USEPA's permitting decision. As to the position of the California Air Resources Board in the same timeframe, see the response to the comment on page 54 of this letter.

The Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures. Section 4.6.4 discusses the health effects attributed to air pollutants and includes revised impacts and mitigation measures.

G207-184
Construction emissions in Federal Waters are not subject to the thresholds of significance outlined by the Ventura County Air Pollution Control District (VCAPCD) and the South Coast Air Quality Management District (SCAQMD). In order to assess the significance, Section 4.6.4 provides a comparison of Project construction emissions with existing offshore emission inventories.

G207-185
The discussion of offshore construction impacts in Section 4.6.4 has been revised, as applicable, to indicate that offshore pipeline construction would not occur during the gray whale migration period, which lasts from November through June.

downplaying marine biological resource impacts, it states that offshore construction *would occur* during this same time frame to ensure that it does not impact the grey whale migration season. (Revised DEIR at p. 4.7-85, AM BIOMar-9a.)

Instead of disingenuously downplaying the impacts of offshore construction emission, the Revised DEIR should have utilized the significance criteria identified at 4.6-24 – 4.6-25. Offshore construction emissions drastically exceed both the Ventura County and Los Angeles County CEQA thresholds of significance, and these emissions will interfere with both areas ability to achieve federal and state standards for ozone.[226]

To mitigate these emissions, offsets must be required to ensure that the project is consistent with local air quality plans, and that it does not interfere with Ventura County and Los Angeles County's ability to achieve federal and state air quality standards for ozone.[227] In Ventura County, emission offsets are required at a ratio of 1.3:1; in Los Angeles County offsets are required at a ratio of 1.0:1 to 1.2:1.

Undisclosed Impacts from Start-up Activity Emissions

The Revised DEIR fails to consider any start-up emissions in its analysis of air quality impacts. The start-up period is assumed to last approximately 60 days and emit 42.3 tons of NOx. Emissions during this period would include about 1,410 pounds of NOx per day.[228] These are significant emissions – exceeding the relevant CEQA significance criteria by a factor or 56.4 for Ventura County and 25.6 for Los Angeles County – that would cause air quality impacts and must be mitigated.[229]

The Revised DEIR distinguishes start-up activities from both construction and operation emissions. (Revised DEIR at 4.6-16.) However, there is no justification or regulation cited in the Revised DEIR as to why these emissions should be identified or evaluated separately from either construction emissions or operation emissions. More importantly, no reasonable basis exists to simply omit these emissions from the impact analysis. These emissions will contribute to onshore air quality problems and interfere with Ventura and Los Angeles Counties' ability to achieve federal and state air quality standards for ozone, and they must be mitigated.

To mitigate these emissions, construction offsets (as described above) should remain in place until completion of the start-up period.[230]

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[226]/ Sears 2006 at 23-24.
[227]/ Id. at 19-21.
[228]/ Id. at 18.
[229]/ Id.
[230]/ Id.

G207-185 Continued

G207-185 Continued

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Construction emissions in Federal Waters are not subject to the thresholds of significance outlined by the Ventura County Air Pollution Control District (VCAPCD) and the South Coast Air Quality Management District (SCAQMD). In order to assess the significance, Section 4.6.4 provides a comparison of Project construction emissions with existing offshore emission inventories.

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Ventura County Air Pollution Control District (VCAPCD) Rule 26.2 and South Coast Air Quality Management District (SCAQMD) New Source Review Regulation XIII are applicable only to stationary source emissions. Further, the USEPA has made a preliminary determination that the emission offsets requirements outlined in VCAPCD Rule 26.2 are not applicable to Cabrillo Port equipment and operations.

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It should be noted that prior to the release of the March 2006 Revised Draft EIR, the staff of the Ventura County Air Pollution Control District (VCAPCD) did not object to the USEPA's permitting decision. As to the position of the California Air Resources Board in the same timeframe, see the response to the comment on page 54 of this letter.

The Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures. Section 4.6.4 discusses the health effects attributed to air pollutants and includes revised impacts and mitigation measures.

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Section 4.6.4 provides a revised discussion and analysis of the air quality impacts associated with FSRU start-up emissions. FSRU start-up emissions are distinguished from normal FSRU operational emissions because start-up emissions are a one-time occurrence and distinguished from construction emissions because the emissions are associated with operational activities.

Undisclosed Impacts from Residential and Industrial Use of Cabrillo Port Natural Gas

The Revised DEIR also fails to evaluate impacts from residential and industrial use of natural gas with higher heating values. As discussed above, Cabrillo Port natural gas could result in increased NOx emissions that will cause additional unmitigated air quality impacts in areas that are in nonattainment for federal and state ozone standards.[231]

These potential increases in NOx emissions have not been identified or evaluated in the Revised DEIR. As discussed above, the Revised DEIR must identify potential sources of project gas, calculate the resulting emissions, and require appropriate offsets.

Mitigation of these emissions is not beyond the jurisdiction of the USCG and CSLC. These emissions are part of the project's impacts and they are required to be disclosed and mitigated in the Revised EIR and the Final EIS before the applicant can obtain a DPA license from USCG and MARAD and prior to any final action by decision makers such as the CSLC and the CCC.

Finally, the greenhouse gas emissions from end use of the gas are not disclosed in the Revised DEIR. These emissions will be substantial, as noted above and in the attached report by Rick Heede.

Conclusion

In sum, the air quality section of the Revised DEIR repeatedly underestimates Cabrillo Port project air emissions, lacks an accurate, meaningful impact analysis, and fails to identify effective mitigation measures, which are legally required to minimize impacts to the maximum extent feasible under CEQA. As a result, the Revised DEIR fails disclose the true air quality impacts to the affected communities and to decision makers, undermining the purpose of both CEQA and NEPA.

4.7 BIOLOGICAL RESOURCES – MARINE

The Revised DEIR Fails to Acknowledge or Adequately Assess Impacts to Marine Mammals

The Revised DEIR Understates the Likelihood of Marine Mammal Presence at the Project Site and Relies on Insufficient, Questionable Data

The Revised DEIR mischaracterizes the potential for occurrence of many species of marine mammals at and near the project site. Tables 4.7-3, 4.7-4, and 4.7-5 list offshore bottlenose dolphin, northern right whale dolphin, short-finned pilot whale, northern elephant seal, and blue whales as not reported near the project site. It states: "…comparatively few marine mammal sightings have been reported at or near the

[231]/ Sears 2006 at 18-19.

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As indicated in Section 4.6.2, the natural gas imported by the proposed Project would need to meet the requirements of Rule 30 and General Order 58-A of the California Public Utilities Commission (CPUC) or it could not be accepted for distribution by SoCalGas. Rule 30, as described, has specific requirements, including a heating value range.

Section 4.6.2 contains a revised discussion of the heating value of imported natural gas that incorporates the recent rulemaking by the CPUC. An analysis of the impacts of the CPUC rulemaking is beyond the scope of this document as required by NEPA and the CEQA.

Last, we disagree with the comment regarding "end use" emissions for the reasons indicated in Section 4.6.2 of the document.

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As stated in Section 4.6.4, in addition to regulated air pollutants, the Project would generate emissions of the greenhouse gases CO_2 and methane (natural gas). The CO_2 emission coefficient for natural gas is 117. Coal (approximately 78 percent carbon) and oil (approximately 85 percent carbon) have higher carbon contents (more pounds of carbon per MMBtu) than natural gas (approximately 75 percent carbon), which leads to greater carbon emissions when combusted (more tons of CO_2 per megawatt hour produced). For comparison, the CO_2 emission coefficient for No.2 fuel oil and anthracite coal are 161, and 227 pounds of CO_2 per MMBtu, respectively.

If the proposed Cabrillo Port Project is not approved, SoCalGas may obtain its gas from elsewhere in North America. In this scenario, the combustion would occur anyway, i.e., would be in the baseline scenario. In the absence of the Cabrillo Port Project, it is also highly unlikely that the natural gas would be left in the ground in Western Australia; it would likely be extracted, liquefied, transported, and sold elsewhere. For the proposed Cabrillo Port Project, the additional life cycle emissions that can be attributed specifically to the Project would be only the portion of those emissions that would be generated by transporting the LNG across the Pacific Ocean to the Cabrillo Port facility. If the LNG were imported into a different receiving facility in California, the GHG emissions would be the same as those of the proposed Project.

G207-191
The Project has been modified since issuance of the March 2006 Revised Draft EIR. See Section 1.4.2 for a summary of Project

changes. Section 4.6.1.3 contains revised information on Project emissions and proposed control measures. Section 4.6.4 discusses the health effects attributed to air pollutants and includes revised impacts and mitigation measures.

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Sightings of both blue and humpback whales off the coast of California are summarized in Section 4.7 and presented in detail in surveys cited in Carretta et al. (2002 and 2005), which are used as sources for Section 4.7.

The closest sightings of humpback whales made during these surveys appear to be off San Nicolas Island and north of the Santa Cruz Passage, between Santa Cruz and Santa Rosa islands. Such sightings lie a considerable distance from the proposed FSRU site. The closest sighting to the proposed FSRU site for blue whales appears to have been made off the mainland coast east of Anacapa and west of Malibu, which is also a considerable distance from the proposed FSRU site.

The sighting data from numerous surveys indicate that the area near the FSRU site has not been favored by either species. This does not suggest that the presence of such species near the FSRU site is impossible, but rather that such whales are not likely to be encountered close enough to the FSRU site to be adversely affected. However, other areas that may include potential LNG carrier routes, as noted in Section 4.7, may be favored by these species.